SKEETCHESTN
LAND AND RESOURCE MANAGEMENT PLAN
DEADMAN WATERSHED

Facilitated by:

Cirque Resources

and

BC Extension Services

2013

Band Council Resolution

SKEETCHESTN INDIAN BAND
330 Main Drive, PO Box 178
Savona, BC V0K 2J0

BAND COUNCIL RESOLUTION

A quorum for this Band consists of 3				RESOLUTION NUMBER 2103
Central District British Columbia	30 Day	07 Month	2013 Year	

Whereas: The Skeetchestn Indian Band is very concerned about the rate of development and state of land management within their Traditional Territory as well as the overall health of their lands and resources particularly within their key watershed Deadman Creek.

Whereas: Last winter in conjunction with the Skeetchestn community there was a Land and Resource Management Plan (L.R.M.P.) drafted for the entire Deadman Creek watershed i.e. "Skeetchestn Land and Resource Management Plan Deadman Watershed 2013" .

Therefore be it resolved: that Chief and Council officially adopt the "Skeetchestn Land and Resource Management Plan Deadman Watershed 2013" as a higher level plan to guide all future development within the Deadman watershed and where applicable the entire Traditional Territory of the Skeetchestn Indian Band until such time as another more comprehensive plan for the entire Traditional territory has been developed.

CHIEF RON IGNACE

COUNCILLOR EDDY JULES

COUNCILLOR DARRELL DRANEY

COUNCILLOR TERRY DENEAULT

COUNCILLOR GABE JULES

COUNCILLOR MARSHALL GONZALES

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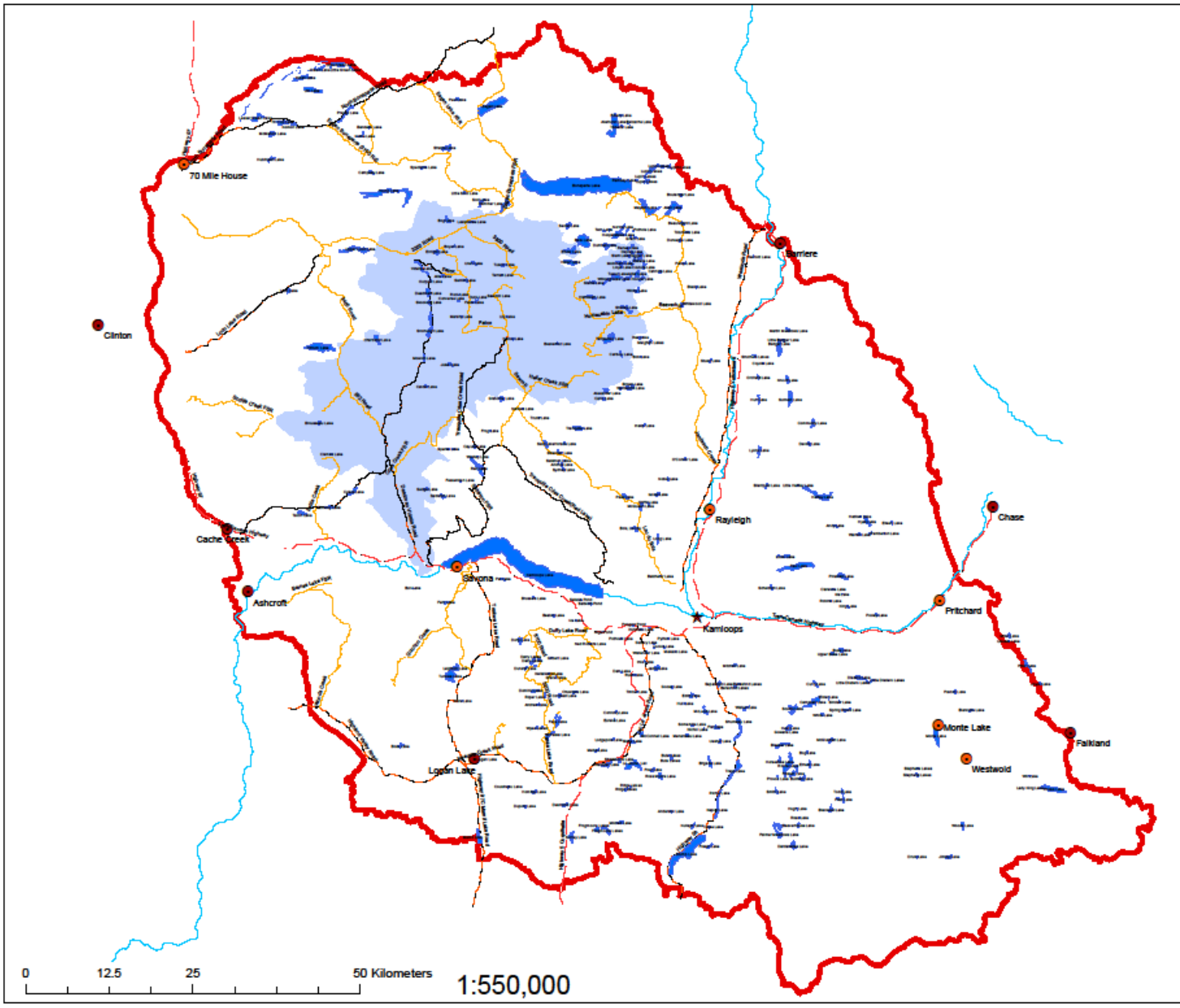
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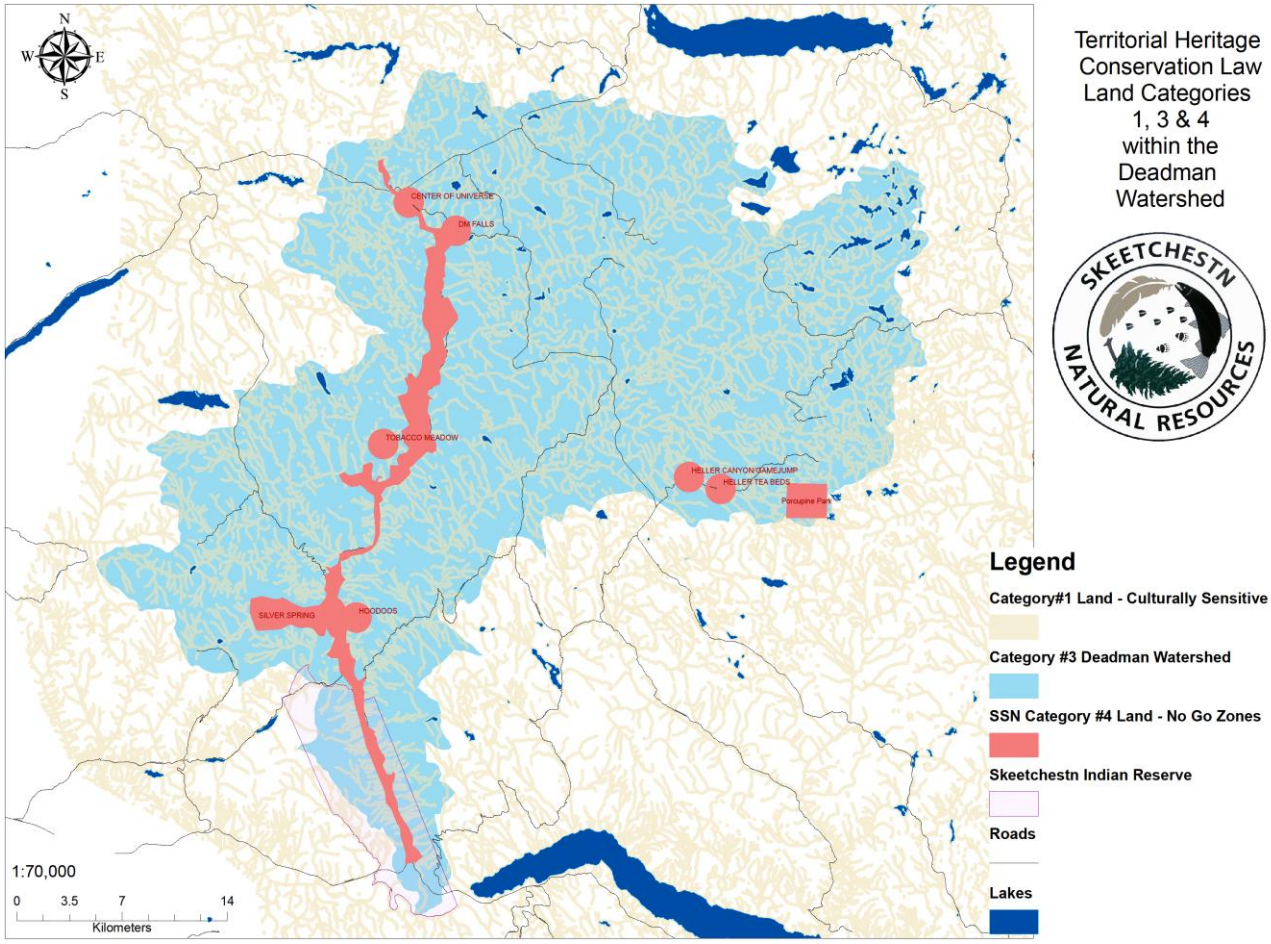
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Territorial Heritage Conservation Law Land Categories 1, 3 & 4 within the Deadman Watershed
SKEETCHESTN NATURAL RESOURCES
Legend
Category#1 Land - Culturally Sensitive
Category #3 Deadman Watershed
SSN Category #4 Land - No Go Zones
Skeetchestn Indian Reserve
Roads
Lakes

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Executive Summary

The Deadman Watershed Land Use Plan is a draft document. It builds upon a foundation of work conveyed in current community academic works by Chief Ronald E. Ignace, PhD, the Skeetchestn Territorial Heritage Conservation Law and the document *Through the Eyes of Sk'lep – A Vision of Ecosystem Stewardship in the Deadman Watershed* (2001). In this 2001 touchstone document, the vision of the Skeetchestn community for natural resource planning in the Deadman Watershed is explored and presented with reference to the Skeetchestn story about Sk'lep the Coyote. Bridging this work and other sources of traditional ecological knowledge, with western scientific documents, has resulted in this draft Land Use Plan. Currently it is a compilation of relevant reference documents written over the past 15 years, bridged with traditional ecological knowledge provided by the Skeetchestn community. The Deadman Watershed covers approximately 150,000 hectares of south-central British Columbia and is within the Skeetchestn Traditional Territory (Karakatsoulis et al. 2005).

There are three main sections to this plan: Resource Management Zones, Implementation and Monitoring and Amendment.

1. Resource Management Zones

Six Resource Management Zone (RMZ) categories have been designated for the LUP area: General Resource Management, Settlement, Protection, Special Resource Management – Cultural Resource Management Zones, Special Resource Management - Habitat / Wildlife Management Areas, Special Resource Management - Recreation and Tourism.

1. General Resource Management

- Areas where a basic set of objectives and strategies guiding management of land, water, ecosystems and resources is applied.
- Objectives and strategies for this zone are also applied as baseline management in all other Resource Management Zones except Protection.

2. Settlement

- Areas of human settlement within the Deadman Watershed.
- Skeetchestn village and ranch lands.

3.	**Protection**	• Areas that have been identified for their cultural, natural, heritage and/or recreational values as defined by the Skeetchestn Indian Band. • Skeetchestn Indian Band prohibits industrial development in all protection RMZ's (including logging, mining, and energy exploration and development). • Areas have also been identified in accordance with the British Columbia governments' Provincial Protected Areas Strategy. • **Note that these areas remain part of the Skeetchestn traditional territory and have not been surrendered through treaty or otherwise, thus are subject to underlying Aboriginal Title.**
4.	**Special Resource Management – Cultural Resource Management Zones**	• Special Resource Management areas where resource development activities are permitted as long as the objectives of the Cultural Resource Management Zones are met. • A Skeetchestn Cultural Heritage Resource Inventory must be conducted in all Cultural Resource Management Zones prior to any resource development activities. • All lands within 100 metres of water, special constraints apply within 50 metres of water.
5.	**Special Resource Management - Habitat/ Wildlife Management Areas**	• Special Resource Management Areas, where resource development activities are permitted provided that habitat objectives are met. • Includes most important areas within the LUP for Moose and Deer winter range, as well as California Bighorn Sheep lambing areas as defined by Skeetchestn Band members. Also includes special management areas for other species as defined by Skeetchestn Band members.
6.	**Special Resource Management - Recreation and Tourism**	• Special Resource Management areas where resource development activities are permitted provided that recreation and tourism management objectives are met.

2. Implementation

This Land Use Plan is a draft. The Skeetchestn Indian Band will be seeking further financial resources to enable their Natural Resources Department to survey and confirm the current status of the Deadman Watershed and finalize objectives. A preliminary list of research and inventory needs is located on page 96 of this document. Some of the work that needs to be completed includes:

- Road inventories
- Culturally Important Plant Inventories
- Update on watershed restoration projects

Once the survey work is completed, the Band will have the necessary information to finalize land use objectives. The Land Use Plan will then be submitted for approval to Chief and Council. The implementation of the Deadman Watershed Land Use Plan will be assumed by the Skeetchestn Indian Band, once financial resources are secured. The Skeetchestn Band will seek to develop a Territorial Patrol Office and Team as a means of monitoring the activities that influence the objectives as set out in the approved Land Use Plan. The Band and Council, in coordination with the Natural Resources Department will direct the office of the Territorial Patrol.

3. Monitoring and Amendment

Following the implementation of the plan, an annual Monitoring Report will be produced by the Natural Resources Department of the Skeetchestn Indian Band. An annual meeting will then be held to communicate the status of the implementation of the plan and solicit community input on progress-to-date. Updates to the plan will be ongoing.

1.0 Introduction

The Deadman Watershed Land Use Plan is a draft plan covering 150,000 hectares of south central British Columbia. The Deadman Watershed is wholly within the Traditional Territory of the Skeetchestn Indian Band (Map 1). The plan is a compilation of internal and external reports, community input, and Traditional Ecological Knowledge[1].

This report contains:

- a synopsis of the social, economic and environmental aspects of the plan area;
- the Skeetchestn perspective;
- an overview of the planning process;
- zones, objectives and strategies for discussion that will guide land and resource management and,
- management direction for implementation, monitoring and amendment of the plan.

This draft Land Use Plan was facilitated by Chris Ortner, R.P.F. of Cirque Resources and Karyn Sutherland, R.P. Bio., BC Extension Services, with guidance and input from Chief Ronald E. Ignace, Ph.D., Mike Anderson, B. Sc. Agr. R.P.F., R.P.Bio. Skeetchestn Natural Resources Department, as well as the Skeetchestn community and its Elders.

[1] Please note that this draft document is a compilation of many documents relating to the Deadman Watershed. In an effort to include as much background information as possible, while staying within time and budget constraints, many supporting passages have been taken as "block extracts." These extracts are readily identifiable by the square brackets of the citation at the end of the extract and justified indentation of the paragraphs.

1.1.1 Physical Description

The Deadman River drains a land base of approximately 1500 km2 into the Thompson River, 50 km west of Kamloops, B.C. The watershed is located northwest of Kamloops Lake and lies within the Kamloops and 100 Mile Forest Districts of the Kamloops and Cariboo Forest Regions, respectively. This watershed encompasses six biogeoclimatic zones; Bunchgrass (BG), Ponderosa Pine (PP), Interior Douglas Fir (IDF), Montane Spruce (MS), Sub-Boreal Pine Spruce (SBPS), and Engelmann Spruce Sub-Alpine Fir (ESSF) zones. Elevations within the watershed range from 606m-1728m.

The area surrounding Kamloops receives an average annual rainfall of 260.5mm. The Kamloops area generally sees 2202 growing degree days (>5 degrees C) and an average of 145 freeze free days. Temperatures of the valley are characteristic of mean July temperatures of 20.9 degrees C and mean January temperatures of -6 degrees C. Average snowfall accumulation equals approximately 77.1" and the lower elevations of the Kamloops area are around 346m.

Within the Deadman Watershed there are numerous smaller watersheds. They can be divided into 12 sub-basins:

Sub-basins:

- Joe Ross Creek
- Vidette Lake
- Upper Deadman River
- Upper Criss Creek
- Mow Creek
- Heller Creek
- Upper Residual Creek
- Tobacco Creek
- Gorge Creek
- Barricade Creek
- Lower Criss Creek
- Clemes Creek

[Karakatsoulis et al. 2005:3]

1.1.2 Social and Economic Description

The Deadman River Watershed is located within the traditional hunting, fishing, gathering and trading areas of the Skeetchestn Indian Band and is the heart of their Traditional Territory. The band is a community of the Secwepemc People who currently reside in permanent villages throughout the Thompson as well as the Quesnel, mid-Fraser, and upper Columbia watersheds. As such, the community of Skeetchestn has a post glacial history of co-existence within the region's ecosystem, and they have settled in a permanent village only within the last couple of centuries (Chief Ron Ignace pers. com.).

Located in the heart of the arid Thompson Plateau, the People of Skeetchestn (the meeting place - in Secwepemc) continue to depend upon the rich Deadman River watershed for food, social, cultural and economic resources. They now share

these resources with the non-aboriginal community, living both inside and outside the valley, and therefore share with these people a responsibility for sustainable development and resource stewardship.

This broad community's dependence on the region's flora and fauna, waters and minerals presents a valuable point of interface between the environment, the local and indigenous communities relevant for sustainable use of these resources – both living and non-living. [Moore 2001:2]

Land uses within the Deadman River watershed include primarily agriculture, forestry and recreation (ARC Environmental Ltd 1998). Currently there are six forestry service campgrounds within the Deadman Watershed, they include; Vidette, Bog, Deadman, Windy, Skookum and Snohoosh Lakes. Provincial parks within the watershed include Bonaparte, Porcupine Meadows, Tsintsunko Lake parks. The area also includes the Skookum Hoodoos Protected Area (Speed and Henderson 1998). Other recreation users of the area include: snowmobiling, camping, fishing, hunting, hiking and mountain biking (Speed and Henderson 1998). [Karakatsoulis et al. 2005:3][1]

[1] Note that the protected areas mentioned above remain part of the Skeetchestn Traditional Territory and thus are subject to underlying Aboriginal Title.

1.2 The Skeetchestn Perspective

When ethnographer James Teit asked Secwepemc elders more than 100 years ago who their earliest ancestors were, he was told that they were the *Coyote People* (Teit 1898:20) personified by Sk'lép, *the Coyote*, who lived at a time of "great winds, heat and fires," described as the xerothermic period by paleoecologists, following the Wisconsin Ice Age about 11,000-7,000 years ago, when the climate was warmer and drier than in subsequent millennia until now[1].

> Located in the heart of the arid Thompson Plateau, the People of Skeetchestn (*the meeting place - in Secwepemc*) continue to depend upon the rich Deadman River watershed ~~Valley~~ for food, social, cultural and economic resources. They now share these resources with the non-aboriginal community, living both inside and outside the valley, and therefore share with these people a responsibility for sustainable development and resource stewardship.
>
> This broad community's dependence on the region's flora and fauna, waters and minerals presents a valuable point of interface between the environment, the local and indigenous communities relevant for sustainable use of these resources. [Moore 2001:2]
>
> On December 11, 1997, the Supreme Court of Canada rendered its decision in *Delgamuukw v The Queen ("Delgamuukw"),* clarifying Canadian law with respect to aboriginal rights and title, as well as clarifying the rights and obligations of the Crown in Right of Canada, and of the Province of British Columbia, to aboriginal nations; The Supreme Court of Canada in *Delgamuukw* made it clear that no government may lawfully infringe on aboriginal rights and title (or give consent to third parties to do so) without first consulting with the aboriginal nation who will be affected. [Skeetchestn 1998:1]

The Skeetchestn Indian Band is the entity descended from the people known as Secwepemc, part of the Secwepemc Aboriginal Nation, who occupied their territory at 1846, the time of the assertion of sovereignty by the British Crown. The Chief and Council of the Band are the elected representatives of the Skeetchestn people; responsible for protecting aboriginal rights and title, and the heritage of the Band is part and parcel of its aboriginal rights and title.

The Band has set out the Band's laws and requirements, within the Skeetchestn Band's territory, concerning heritage matters, and set out what governments and third parties are required to do in consulting with the Band concerning that heritage. This requirement is set out in the Territorial Heritage Conservation Law[2], and detailed components are set forth in this Land Use Plan, in

1 Yiri7 re Stsœeys-kucw: Secwepemc Laws in Oral Histories, Ronald E. Ignace and Marianne Ignace

2 See Appendix 1 for the Territorial Heritage Conservation Law

recognition of Skeetchestn's right to stewardship of the land and the control of Natural Resources within our Traditional Territories.

This right has been further supported by the Haida and Taku River decisions and locally by the Six –Mile Agreement.

The Supreme Court of Canada made a judgment in the Taku River Tlingit case against BC, and the Court stated clearly that the BC government and the corporation Redfern were wrong in their argument that the government could authorize activities that could infringe Aboriginal rights. The Court said that the activities of the Province that might infringe Aboriginal rights and title are limited by the constitutional provisions with respect to the division of powers and specifically s. 91(24) in the Constitution Act, 1867. Section 91(24) allocates to the federal government the jurisdiction for "Indians and Lands reserved for the Indians". This limits the power of the province to infringe Aboriginal rights and title.[1]

The Haida case confirmed the Nation's right to title, and the Province of BC's duty to consult.

In November 2007, a similar decision found that the Tsilhqot'in Nation hold aboriginal title to about 200,000 hectares of the 440,000 hectares that constitutes their traditional territory in the province's central Interior. A proposal to log Tsilhqot'in land prompted the court case that was launched in 1990.

In the Six Mile Ranch case in 2000, the Skeetchestn Indian Band negotiated an out of court settlement that Skeetchestn Chief Ron Ignace called a victory for his band, which was faced with spending years in court fighting the infringement of Aboriginal title. The nation had already gone to court to place notices of the ongoing claims fight on resort land titles as a warning to potential purchasers.[2]

In cases where Delgamuukw allows for the infringement of Aboriginal title by Government, that infringement is allowed only if it is supported by meaningful consultation, accommodation and compensation. In view of the fact that Skeetchestn's Aboriginal title is constantly being infringed upon by the administrative practices of the Provincial Government, it would be in Governments best interests to implement meaningful co-management measures, based upon the principles outlined in the 1911 Sir Wilfred Laurier Memorial[3] .

It must be recognized that Skeetchestn has an Aboriginal interest on the land and water within all areas of their Traditional Territory. Skeetchestn also has cultural values within all these areas. Skeetchestn's foremost priority throughout their Traditional Territory is and has always been conservation of the resources including but not limited to water, biodiversity, timber, wildlife, fisheries, traditional heritage values, soils and spiritual values.

In order to meet these ends, particularly in this time of extreme pressure put on ecosystems by the Mountain Pine Beetle, measures to be taken by Government should include the immediate adoption and implementation of Skeetchestn Cultural Resource Management Zones and Skeetchestn

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1 http://www.ubcic.bc.ca/files/PDF/Taku_PressStatement_Backgrounder.pdf

2 http://www.ammsa.com/publications/ravens-eye/one-hurdle-left-developer

3 http://www.shuswapnation.org/memorial.html

Silvicultural Strategy throughout Skeetchestn Traditional Territory. The implementation of ecosystem based management regimes, as Skeetchestn demanded during license transfers between Ainsworth and West Fraser some years ago, will also assist in applying the principles of Traditional Secwepemc forest resource management to Skeetchestn's Traditional forest lands. Such a holistic management regime should bring the control of the resources and the subsequent benefits back to the local forest communities and ensure the sustainability of local communities, cultures and eco-systems.

The Bridge Between Western Science and Traditional Ecological Science

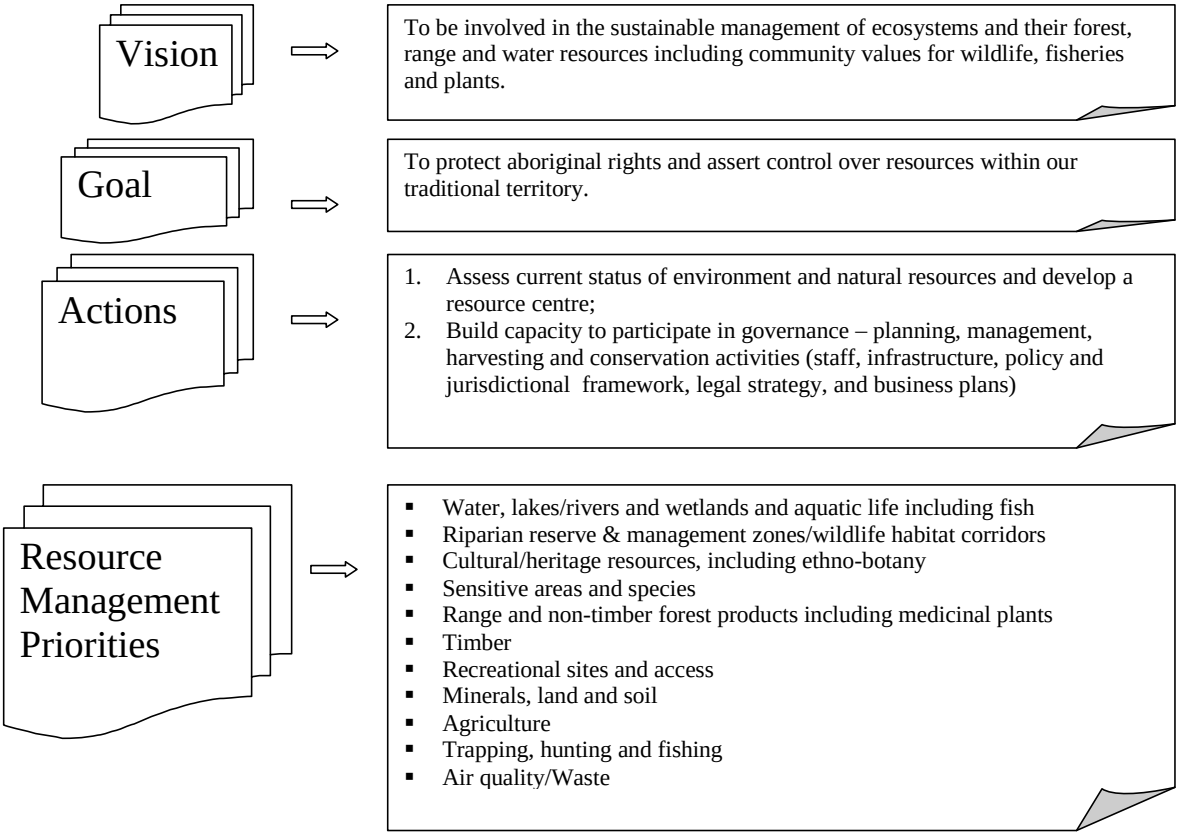
Factual information is contained in stories/oral histories. They not only transpose the natural world into a social world but in fact disseminate and transmit (as history) factual information and details about geographic and geological events and processes, ecological relations among fauna and flora in specific environments, the occurrence of species and minerals, and specific places that bear such resources. By naming people (albeit sometimes people who have animal characteristics) as interacting in these environments, they also address human history as not removed and separate from environmental history, but as part of it. What throws the empirical, positivist -minded European observer, who has learned since the Enlightenment to separate nature from culture, human agency from the environment, and metaphysical powers from the physical world, is the meshing of different levels of experience in our stories (Ignace 200: 40).

> Currently, the Band's natural resource management activities provide an ecological focal point for federal and provincial agencies and natural resource management. Science is an important cornerstone to natural resource management programming in the valley, and the Skeetchestn Band ensures that traditional ecological knowledge is afforded local weight in decision-making through collaborative community-based programming – linking elders and their knowledge to resource management through their Secwepemc language (Chief Ron Ignace, pers. com.). The Skeetchestn Band finds that historical and contemporary local knowledge is often overlooked in many scientific based studies within the watershed. It has been our experience in the past that these local sources of knowledge and traditional ecological knowledge often prove more accurate than much of the scientific data collected and/or presented. In addition, project referrals may trigger a heritage investigation to accommodate the systematic study and analysis of an area for the purpose of protection and conservation. [Moore 2001:7]

1.3. The Planning Process

Background:
1994-1999 Skeetchestn Economic Development and Natural Resources Planning

The Band led economic development and related natural resources planning within the Skeetchestn community from 1994 – 1999 that addressed sustainable natural use and development more broadly. A subsequent workshop was organized by the band to define specific natural resources management planning priorities in the community which identified the need for specific sustainable resource management and capacity building plans, as well as economic development objectives. These priorities are considered in the vision, goal and action plan outlined below drawing upon current workshops. [Moore 2001:12]



*taken from Moore 2001.

Following the 1994-1999 natural resource planning work, progress slowed as a change in government led to a reduction in land use planning funding from 2001 through 2013.

1 Goals

1. Determine and direct the management regime to be used within the Deadman Watershed and the rest of Skeetchestn Traditional Territory.

2. Fully implement Skeetchestn's Territorial Heritage Conservation Law.

2 Principles

- Respect Traditional Ecological Knowledge.
- Involve all community members in decision-making.

3 Process Overview

As a result of negotiations between the Skeetchestn and the New Relationship Trust and part of the reconciliation agreement, traditional land use plans will be developed for two the four watersheds in the traditional territory. This land use plan will focus on the Deadman Watershed and will inform process and assist in planning resource development on current forest licenses.

Project team:

Organization	**Name**	**Role**
Cirque Resources	Chris Ortner, M. CAM, R.P.F.	Facilitator
BC Extension Services	Karyn Sutherland, R.P.Bio.	Co-Facilitator
Skeetchestn Band and Council	Chief Ronald E. Ignace, PhD.	Contributor
Skeetchestn Natural Resources	Mike Anderson, B.Sc.Agr., R.P.F., R.P.Bio.	Forester
Skeetchestn Natural Resources	Avon Isnardy & Samantha Draney	GIS Specialist
Skeetchestn Band Council	Gabe Jules	Planner
Skeetchestn Natural Resources	Lea McNabb, B. Arch.	Archaeology
T'kemlups Indian Band Cultural Resource Management	Jim McGrath, R.P.F.	TIB Rep
Ministry of Forests, Lands and Natural Resource Ops.	Jennifer Fraser, R.P.F.	Planner
MFLNRO participation-in-kind contrib.	Dave McBeth, R.P.F.	Planner

Phases of current Land-Use Plan development

Phase 1	**November 2012** Scoping – initiation meetings and discussions
Phase 2	**November 2012** Information Assembly – define application area and attributes; inventory existing information; define focus areas; and organize information for map presentation.
Phase 3	**January 2013** Draft Traditional Land Use Plan – literature review/draft plan/meet with Chief and Council
Phase 4	**February 2013** Evolution of the Land Use Plan – community meeting to present plan and collect input/ modify plan.
Phase 5	**March 2013** Present draft Land Use Plan

The initial planning process consisted of 5 phases and was initiated in November of 2012. These initial 5 phases consisted of an extensive literature search and community input session. More work will be required to inventory current status of numerous resources and then formalize objectives and mapping of land use areas before final submissions are made to Chief and Council and subsequently to government. Once the final Deadman Watershed Land Use Plan is approved, implementation and monitoring of final plan will begin.

2.0 Resource Management Zones

Legend: Skeetchestn LUP Resource Management Zone Map

The following Map (Map 2) delineates Category 1, 3 and 4 lands as per the Territorial Heritage Conservation Law (1998)[1]. The definition of these four categories of lands is laid out below.

- Category #1 land: areas within the Band's territory which are of such heritage value that they are in need of protection under the Territorial Heritage Conservation Law.
- Category #2 land: areas which no longer come under the provisions of this law because an agreement has been reached pursuant to section 7 of this law. (no category #2 lands are found in the Deadman Watershed)
- Category #3 land: areas for which the level of protection required is uncertain.
- Category #4 land: areas within the Band's territory which are of such heritage value that there shall not be any infringement of the heritage resources on such lands.

[1] See Appendix 1.

This section outlines a general set of objectives, strategies and indicators that apply to all land and resources in the Deadman Watershed.

2.1.1 Land Management

2.1.1.1 Soils

Soils of the Deadman Watershed are generally characteristic of Eutric Brunisols at lower elevations, Gray Luvisols at higher elevations and Dark Brown Chernozems at low elevation grasslands (Young et al. 1992). Soils within the Deadman River Valley are generally fine textured and are extremely susceptible to erosion and contribute high quantities of sediment into surrounding watercourses (Olmsted et al. 1992).

Soil is a very integral component of the forested and riparian ecosystems for the many functions ~~in~~ which it provides. Soil provides gases, moisture, nutrients and a rooting medium as well as habitat for [a multitude of small and microscopic organisms] (Mike Anderson, pers. com.) while providing filtered water to aquatic systems (Sutherland 2003). Maintaining the integrity of soils is crucial to ensure proper functioning, as damaged soils can take many years to return to their pre-disturbed state. The major components of soils include mineral and organic particles that are surrounded by pore spaces containing either water or air (Sutherland 2003). It is the texture and moisture content of these components that determine how severe the degradation from harvesting may be" (MacDonald 1999). [Karakatsoulis et al. 2005:5, 39]

2.1.1.2 Access management

In 1998 the Deadman Watershed road network was inventoried and it was identified that it consisted of 1772 km of road (Moore 2001). More than a quarter of that was targeted for access control and at least 473 km of forest access road had been proposed for deactivation in the valley (Speed and Henderson, 1998). Currently (2013) it is estimated that there is as much as 2500 km of roads, with only 100 km deactivated (Skeetchestn Land-use Planning Community Input Meeting Report 2013). Extensive road networks including many cross district and circle routes have been constructed and established in the upper Deadman Watershed including on the plateau (Mike Anderson, pers. com.). Much of the road building off the main Deadman-Vidette Road originated in the forest practices of the last century, although they became popular for mining exploration and recreation.

Like the Deadman Watershed, roads are a widespread and increasing feature of most developed landscapes. Studies have found that roads can be more significant agents of change than clearcuts (Tinker *et al*. 1998).

A review of the ecological effects of roads on terrestrial and aquatic communities found 7 general effects:

- mortality from road construction;

- mortality from collision with vehicles;
- modification of animal behaviour by changing animal home ranges, movement and reproductive success;
- escape response;
- alteration of the physical environment such as soil density, temperature, patterns of runoff and sedimentation;
- alteration of the chemical environment by adding heavy metals, salts and nutrients to roadside environments;
- spread of exotic weeds and plants, and
- increased use by humans which promote increased hunting, fishing, and passive harassment of animals (Trambulak and Frissell 2000).

[Moore 2001:11]

In the Deadman Watershed, excessive dust from logging traffic impacting roadside vegetation is also of concern, as is the increasing width of today's standard of road building. "Danger tree" felling and day lighting of roads is creating widening barriers to wildlife travel and presenting major problems to the exercise of Aboriginal rights across the Bands territory (Mike Anderson, pers. com.).

> Current road building practices often include many additions to an extensively long network of existing roads, often adding parallel or duplicate roads to the already existing road network within an area. New roads are built to very high standards in terms of alignment, design speeds, visibility etc. These new road systems often require extremely wide rights of way, huge masses of earth to be moved and excessively overbuilt ditching and drainage systems that further disrupt the natural environment. The Skeetchestn Band has been calling for minimal impact road building and the use or modification of existing roads rather than the construction of new roads wherever possible for many years. The Band feels that reduction of the design parameters on forest roads would reduce hauling speeds somewhat, however, it would result in much less of the productive forest landbase being taken out of production for road bed and rights of way and much less in the way of hydrological disruption and other ecological disturbance. There is a long history of community involvement in stream bank protection, tree planting and the elimination of herbicides along transportation corridors. [Moore 2005:11]

Other linear corridors such as power right-of-ways will also have a similar impact[1]. This overall increasing network of access will impact many resources including wildlife, and traditional plants, and encourage the establishment of noxious weeds (Moore 2005).

[1] See Appendix 3 for an historical list of large impact linear corridors in the Deadman Watershed.

The primary objectives for land management are as follows:

Objectives and strategies for land management in the Deadman Watershed

Objectives	Strategies	Indicators
<u>Manage fragmentation:</u> • No net increase in roads and other linear right-of-ways[1,2]. • Reduce the threat of road mortality[1]. • Reduce alteration of wildlife movement, home ranges, and reproductive success due to linear corridors[1].	• Re-inventory linear corridor network[2]. • Revert Deadman road back to a no-through road[2]. • More effective road de-activation (better recontouring & replanting to deter use) [2]. • Increased modification of existing roads, rather than new roads where possible[2]. • Eliminate circle routes by removing or putting roads to bed[2]. • Close all cross District connectors when not in use consider taking them out once bulk of harvesting has been done[2].	% of roads deactivated annually[2]. Number of road blockages[2]. Number of bridges removed after harvest[2]. Area of unreclaimed, unvegetated, roads, landings, trails, power lines, right-of-ways, etc. per sq. km.[3]
<u>Limit Access:</u> • Limit access to certain areas by outside users (ie recreational, mining)[2]. • Reduce wildlife harvesting by outside users[1]. • Eliminate logging and mining in valley bottom to reduce access pressure[2].	• Monitor and advance access management planning considering forest, grassland and wetland ecosystems values[1]. • More coordinated access management plans[1, 2]. • More "informed consent" for land-use activities, needs to go beyond "mere consent[2]."	To be determined

[1] Taken from: Moore, D. 2001. Through the Eyes of Sk'lep: A Vision of Ecosystem Stewardship in the Deadman Watershed. Final Copy. Prepared for the Skeetchestn Indian Band. 27p.

[2] Taken from: Skeetchestn Indian Band. 2013. Land-use Planning Community Input Meeting Notes. File records. 30p.

[3] Taken from the 1995 Kamloops Land and Resource Management Plan. These management objectives, strategies and indicators are for discussion purposes only.

<u>Mitigate physical/chemical impacts:</u> • Limit alteration of the physical environment due to roads[1]. • Minimize chemical alteration of roadside environment (i.e. addition of heavy metals, salts, and nutrients)[1].	• Increased use of minimal impact road building for new roads[1,2]. • Minimize dust from roads and industrial traffic[2].	To be determined
<u>Reduce spread of noxious weeds:</u> • Minimize the spread of noxious weeds and plants via biological/mechanical methods only[2]. • Elimination of herbicides along transportation corridors.	• Inventory of introduced species[2]. • Increased use of biological and mechanical methods to control noxious weeds[2].	Presence and abundance of noxious weeds.
• Limit engine horsepower on lakes to 15 HP[2]. • Improved value exchange for expropriated lands[2].	• To be determined	To be determined

[1] Taken from: Moore, D. 2001. Through the Eyes of Sk'lep: A Vision of Ecosystem Stewardship in the Deadman Watershed. Final Copy. Prepared for the Skeetchestn Indian Band. 27p.

[2] Taken from: Skeetchestn Indian Band. 2013. Land-use Planning Community Input Meeting Notes. File records. 30p.

2.1.2 Water Management

2.1.2.1 Water quality and quantity management

> Valley residents see water quality, quantity, timing of flow and flow regimes as important indicators of ecosystem health. An historic dam at Snohoosh Lake was constructed at the turn of the last century to support agricultural developments in Walhachin and was reconstructed between 1968 and 1977 (Don Ignace, pers. com.) to accommodate the needs of Valley residents. Water management planning to accommodate fish flow needs at Snohoosh Lake Dam began formally with provincial and federal fisheries managers and the Improvement District in 1985. Water flow plans of today are designed to accommodate needs for irrigation and fisheries values. Fisheries managers worked together to incorporate flow patterning that would emulate historic freshet timing and minimize low flow extremes, while protecting water reserves sufficiently to accommodate agriculture and domestic water needs downstream. [Moore 2001:8]

In 2001, the Ministry of Environment, Lands and Parks, identified 6 water courses of significance in the Deadman Watershed; Clemes Creek, Clemes Lake, Deadman River, Skichistan Spring, Snohoosh Lake and the Thompson River (Jolly 2001). Skeetchestn Indian Band has added Criss Creek, Tobacco Creek, Barricade Creek, Gorge Creek and Silverspring Creek to that list of important water courses (Skeetchestn 2013).

The following is a list of water licenses benefiting the Skeetchestn Band that was documented in the 2001 publication *First Nations Water Rights in British Columbia – A Historical Summary of the Rights of the Skeetchestn First Nation*. Some inventoried water courses have an adjacent update.

1. Clemes Creek: Final Water Licence 10701 –authorizes irrigation from April 1 – June 30th due to water shortages on Clemes Creek. (Jolly 2001). Update: *Clearcutting adjacent to this creek has altered the timing of the flow. There is a heavy run-off in early spring, followed by a very low flow the following months. Also, there is concern about the alteration of the flow of this creek by a private landowner. A lake has been created which has possibly been endorsed by Ducks Unlimited. This needs to be addressed* (Skeetchestn 2013).

2. Clemes Lake: Final Water Licence 10700 in the name of Skeetchestn Band is the only license on Clemes Lake (Jolly 2001).

3. Deadman River: Of the 23 active licences, 3 are for the benefit of the Skeetchestn Band
    a. Final Water License 10505 (first in priority), Conditional Water License 48102 (19th in priority), and Conditional Water License 48103 (20th in priority)
    b. Applications have been filed by Fisheries & Oceans for the right to use water for conservation purposes.

c. Deadman River is fully subscribed for irrigation purposes.In 1971 a letter from Commercial Fisheries Branch indicated that an investigation had found that "This stream is utilized by spawning and rearing Coho and Chinook salmon." During the summer months critically low flows will invariably eliminate Deadman's Creek as a fish producer" (Jolly 2001). Update: *a further 3 water licenses have been acquired by the Skeetchestn band in the course of purchasing private land* (Skeetchestn 2013).

4. Skitchistan Spring: Final Water License 10504, in the name of the Skeetchestn Indian Band, is the only active licence on Skitchistan Spring.

5. Snohoosh Lake: No water licenses on Snohoosh Lake have been issued for the benefit of the Skeetchestn Band.

6. Only one licence in the name of the Deadman's Creek Improvement District, which authorizes the storage of 5000 acre/feet of water per year. Update: *This water license is fully subscribed (Don Ignace, pers. com.).*

7. Thompson River: No water licences for the benefit of Skeetchestn Band. Update: *Currently an application has been submitted to acquire a water license for the Thompson River to support future development* (Skeetchestn 2013).

8. Update: *Bates Spring water license **is not** in the name of Skeetchestn Band* (Skeetchestn 2013).

Groundwater Records:

- Evidence of 23 wells on Deadman's Creek Reserve. Most yield small amounts of water, ranging from 36 gallons/minute to 100 gallons/minute. Utilization of these wells in unknown (Jolly 2001).

Municipal Water Sources

- Deadman's Creek Reserve is nearby Savona. The reserve is within the boundaries of the Deadman's Creek Improvement District and presents the potential for water supply to the reserves via a municipal water system (Jolly 2001).

Snohoosh Lake Dam was constructed at the turn of last century to support agricultural developments in Walhachin and was reconstructed in 1968 and 1977 to accommodate the needs of Valley residents (Moore 2001). The lake is 250 acres (Jolly 2001).

Deadman Creek Improvement District *(incorporated 1973)* contributes to water management in the watershed and is concerned with maintaining adequate water flow levels in Deadman River for domestic, fisheries, and agricultural demands. Currently the District has licenses to obtain water for irrigation purposes from Deadman River and to store water on Snohoosh Lake in support of their diversion licences. Estimated records of water use in 1994 reported that the Deadman's Creek Improvement District used 505 acre feet of water per year, well below their licensed rights (Jolly 2001). Current information states, however, that the Improvement District

is using its full 5000 acre feet water licence, most of it for the benefit of the Skeetchestn Band (Don Ignace, pers. com.).

2.1.2.2 Watersheds

> The Deadman River Watershed is located northwest of Kamloops Lake and approximately 50 km west of the City of Kamloops. The watershed is primarily located within the Kamloops Forest District, however a significant portion is within the 100 Mile Forest District (Speed and Henderson 1998). The watershed has an area of approximately 1509 km^2, has 12 sub-basins, and is located within the Thompson-Okanagan Plateau [Moore 2001].

The Deadman River and Criss Creek Watersheds are at risk. The Kamloops TSA Watershed Risk Analysis reported that the Deadman River watershed and Criss Creek watershed were ranked 5th and 6th highest for environmental risk. This is out of 570 reporting units in the Kamloops TSA, indicating that a more detailed analysis for development, conservation, rehabilitation, or other purpose is required (Forsite Consultants Ltd. 2012).

The following is a description of the risk factors as defined in the report:

Hazards, as defined in this risk analysis, are a source of potential harm, or a situation with a potential for causing harm in terms of human injury, damage to property, the environment, and other things of value or some combination of these. Hazard scores are the measurement or expression of the likelihood or probability of hazard occurrence. In watershed management hazards can fall into the following three hazard categories:

1. Effects of runoff and stream flow
    a. Increases in the frequency and magnitude of hydrogeomorphic events (floods, bank erosion, channel instability, debris floods, and debris flows),
    b. Reductions in water yield, low flow, and water supply,

2. Reduced water quality as a result of sediment or other deleterious material input to streams from roads, landslides, or other upslope sources, and

3. Reductions in riparian function and aquatic habitat.

Indicators were developed to predict potential changes in each of these three hazard categories – streamflow, sedimentation, riparian function – based on either site or land-use related factors. Indicators for all reporting units found in the Deadman Watershed are found in Tables 1 and 2. Table 4[1] lists each of the indicators used along with the measures involved, the formulae, and comments on the intent and purpose of each (Forsite Consultants Ltd. 2012).

[1] See Appendix 4.

Table 1. First set of hazard ratings for each reporting unit in the Deadman Watershed.

Reporting unit name	Type	Non-forested area	BEC Zone	ECA	Drainage Density Ruggedness	Absense of Lakes and Wetlands	Extent of Roads	Terrain Stability	Erodible Soils	Steep Coupled Slopes	Roads close to water	Roads on Steep Coupled Slopes
Deadman River	Lg. Watershed	10.0	1.8	4.4	6.2	8.4	2.9	0.1	1.5	0.1	2.3	0.0
Criss Creek	Watershed	10.0	1.9	4.3	5.7	8.8	3.0	0.0	0.0	0.0	2.4	0.0
Upper Deadman River	Watershed	10.0	3.3	4.3	2.8	6.4	2.2	0.0	5.1	0.0	1.7	0.0
North Upper Deadman River	Basin	10.0	3.4	5.3	1.5	8.3	1.3	0.0	7.9	0.0	1.3	0.0
Barricade Creek	Watershed	10.0	2.0	5.8	5.1	8.6	4.9	0.3	1.3	0.3	4.0	0.0
Gorge Creek	Watershed	10.0	1.8	4.6	4.9	9.1	3.5	0.1	0.3	0.1	3.2	0.0
Upper Criss Creek	Basin	10.0	3.3	4.2	3.6	7.8	3.3	0.0	0.0	0.0	2.4	0.0
Mow Creek	Basin	10.0	3.5	5.3	3.5	8.8	3.1	0.0	0.0	0.0	2.5	0.0
Heller Creek	Basin	10.0	3.4	5.9	3.4	9.0	3.7	0.0	0.0	0.0	2.0	0.0
Joe Ross Creek	Watershed	10.0	3.2	4.6	2.0	7.6	2.8	0.0	5.3	0.0	2.1	0.0
Tobacco Creek	Watershed	10.0	1.0	5.2	2.6	8.2	2.0	0.2	0.0	0.1	1.3	0.0
Clemes Creek	Watershed	10.0	1.3	3.8	4.8	9.4	2.3	0.3	0.0	0.3	1.6	0.0
West Deadman Creek	Watershed	10.0	0.0	3.4	5.0	9.9	2.6	0.0	0.5	0.0	2.7	0.0

Table 2. Second set of hazard ratings for each reporting unit in the Deadman Watershed including the final Environmental Risk Score.

Reporting unit name	Disturbance on Gentle over Slope	Logged Riparian Zones	Range Tenures	Private Lands	Mining	Stream Flow Hazard	Sedimentation Hazard	Riparian Function	Environmental Hazard Score	Environmental Consequence Score	**Environmental Risk Score**
Deadman River	0.7	4.0	9.8	4.2	1.8	7.7	3.6	7.6	7.8	10.0	**8.3**
Criss Creek	0.0	4.4	7.8	3.2	2.4	7.8	3.4	6.5	7.2	10.0	**7.8**
Upper Deadman River	0.0	3.0	8.3	1.9	1.3	6.5	3.2	5.5	6.2	6.0	**4.0**
North Upper Deadman River	0.0	7.1	6.9	0.0	0.0	6.8	3.8	5.6	6.6	6.0	**4.2**
Barricade Creek	0.4	4.3	6.2	0.5	1.9	8.2	4.1	4.6	6.6	6.0	**4.2**
Gorge Creek	0.6	7.0	6.9	0.3	2.1	7.8	3.9	5.8	7.0	4.0	**3.0**
Upper Criss Creek	0.0	3.2	7.7	2.7	3.3	7.3	3.4	5.8	6.6	4.0	**2.8**
Mow Creek	0.0	3.5	5.7	1.6	1.0	7.7	3.2	4.5	6.0	4.0	**2.5**

Heller Creek	0.0	5.8	4.4	0.5	0.0	8.0	2.9	4.4	5.9	4.0	**2.5**
Joe Ross Creek	0.0	5.8	0.0	0.0	0.0	6.8	3.4	2.3	4.7	4.0	**2.0**
Tabacco Creek	0.3	3.3	0.0	0.0	0.0	6.7	2.6	1.3	3.8	4.0	**1.6**
Clemes Creek	0.3	2.4	6.9	2.6	0.0	7.4	3.1	5.0	6.1	2.0	**1.3**
West Deadman Creek	0.0	1.2	6.3	1.2	0.0	7.3	3.4	3.6	5.5	2.0	**1.2**

Watershed Restoration

The following excerpt is a synopsis of restoration planning investments made relating to the Deadman Watershed from 1998 to 2001. Restoration objectives and opportunities for implementation were identified, and some specific watershed assessments were carried out. However, no further recommendations from these reports have been implemented since that time. It is the desire of the Skeetchestn Natural Resource Department that priority actions are re-identified from these reports and work carried out (Mike Anderson, pers.com.).

Comment [ma1]: This will need updating possibly as part of the next phase of this plan

An Integrated Watershed Restoration Plan[1] for Deadman Watershed was prepared in association with Forest Renewal BC (FRBC) in 1998 for Ainsworth Lumber Company. The plan specified broad watershed level planning objectives to guide restoration work in stream and in upslope areas of the Deadman Valley. Unstable soil sites and eroding stream channels were targeted in areas associated with the company's forest practices. Recommendations and priorities for future assessments arose from 5 phases of overview assessments:

- Interior Watershed Assessment Procedure (IWAP);
- Sediment Source Survey (SSS);
- Overview Fish Habitat Assessment Procedure (OFHAP);
- Watershed Level Planning and Project Component Objectives, and
- Access Management Map.

The study recommended watershed restoration work, including $1,013,920 for major project works over the subsequent 4 years, and $283,800 for preparation of watershed restoration prescriptions (Moore 2001).

FRBC's *Watershed Level Planning* and Project *Component Objectives* were recommended to guide future watershed restoration programming associated with forest activities in the project area. Following recommendations of that report, detailed watershed assessments were conducted in Gorge Creek in 1999 and in Lower Criss Creek in 2000.

[1] Speed, M. and Henderson S. A Deadman River Watershed Integrated Watershed Restoration Plan. March 1998. Pepared by Integrated Woods Services Ltd. Funded by FRBC for Ainsworth Lumber Co. Ltd., Savona Division.

A Deadman River Watershed Restoration Plan[1] was developed in 2000 to address outstanding impacts of forest practices in the valley. The watershed restoration committee included the area forest companies, provincial Ministries of Environment and Forests, the band, and the Thompson Basin Fisheries Council. The plan outlines previous assessments, activities to date, and those activities proposed that remain outstanding from previous work and qualified for FRBC Watershed Restoration Program funds.

The plan identified 5 projects for immediate work arising from a field review of 17 upslope road sites on reserve and on private land along the Deadman River below Mowich Lake. The plan also confirmed 57 road blockages throughout the watershed proposed by Ministry of Environment, Lands and Parks and the Skeetchestn Indian Band to minimize sedimentation and to protect wildlife and heritage values (Moore 2001).

Comment [ma2]: Do we have a record of where these blockages were to be?

In 2001, a *Final Report – Overview of Watershed Restoration Opportunities* was prepared by Integrated Woods Services Ltd.[2] with specific reference to instream conditions in 16 kilometers of the Deadman River channel below Mowich Lake. Opportunities for instream work (channel stability and fish habitat) and restoring riparian vegetation communities were included in the assessment. A total 36 sites were identified as a priority for stabilization work. More detailed prescriptions were recommended to direct subsequent major works on 21 sites, totaling 3434 meters of high priority shoreline and on 15 sites of moderate priority totaling 1125 meters of shoreline downstream of the lake. Deadman River sites, below the Skeetchestn Village, were considered a lower priority that regions of higher rearing and spawning value upstream. The lower reaches of the river represent relatively low density rearing, and are frequented by emmigrants to the Thompson mainstem, where juvenile salmonid survival is considered lower than in the Deadman River itself (Don Ignace, pers. com.). [Moore 2001]

Control watershed proposal

In efforts to assess the trends and status of environmental values in the Deadman Watershed, the Skeetchestn Indian Band will choose a relatively untouched watershed with the same biogeoclimatic features to use as a control watershed. This watershed will be used to compare the ecosystems and biodiversity that exist in the Deadman. The results of co-investigations will guide restoration programs and community-based recovery plans. In addition, the Skeetchestn Indian Band and the Deadman Watershed Committee have identified several ecological indicators, priorities and objectives they would like to see incorporated and managed for in a

[1] Ainsworth Lumber Co. Ltd. And Weyerheauser Company Limited. Deadman River Watershed Restoration Plan. 2000-2001. Prepared by Integrated Woods Services.

[2] Overview of Watershed Restoration Opportunities in the Deadman River – Final Report, January, 2001. Prepared by Integrated Woods Services and funded by FRBC.

community-based ecosystem management plan for the Deadman Watershed. [Moore 2001]

Currently the Silverspring watershed (a small watershed within the Deadman Watershed) is under review as a potential control watershed and discussions are taking place between Tolko and a local organic farmer whom is settled in the area. Of additional interest to the Skeetchestn is the preservation of this relatively untouched watershed. Previous attempts by the band to locate a similar watershed in the region of sufficiently similar ecological characteristics have failed (Mike Anderson, pers. com.).

The primary objectives for water management are as follows:

Objectives and strategies for water management in the Deadman Watershed.

Objectives	Strategies	Indicators
Water Quantity • Ensure that the Skeetchestn band has access to adequate water rights for current and future needs[1]. • Maintain base flow for all fisheries including Coho salmon[2]. • Recognize interaction of groundwater with surface water sources[3].	• Access water rights to the Thompson River for future development[2]. • Address control of water quantities in Deadman Creek to ensure adequate water for community needs[2]. • Develop a report on cause and effect relationships associated with land and resource use in the valley and water management priorities of the valley residents[1]. • Review and refine water management strategies through Improvement District in concert with riparian restoration strategy to address fish and other values[1].	Average seasonal water levels in major water courses and storage facilities[3].
Water Quality • Ensure existence of acceptable levels of water quality[3].	• To be determined	Changes in water quality[3].
Stream Flow Regimes • Maintain water flow plans that accommodate the needs for irrigation and fisheries values[1]. • Minimize risk to lives and property from flooding and erosion[3].	• Continue to incorporate flow patterning that would emulate historic freshnet timing and minimize low flow extremes, while protecting water reserves sufficiently[1]. • Develop a communications theme between valley residents, MFLNRO, DFO and the Band to address naturalization of flow regimes as required to maintain ecosystem values, flood control and water needs[1].	Changes in flow regime[3]. Frequency of water shortages in low flow periods[3].

[1] Taken from: Moore, D. 2001. Through the Eyes of Sk'lep: A Vision of Ecosystem Stewardship in the Deadman Watershed. Final Copy. Prepared for the Skeetchestn Indian Band. 27p.

[2] Taken from: Skeetchestn Indian Band. 2013. Land-use Planning Community Input Meeting Notes. File records. 30p.

[3] Taken from the 1995 Kamloops Land and Resource Management Plan. These management objectives, strategies and indicators are for discussion purposes only.

Riparian values • Recognize and consider the water requirements of wildlife and plants[1]. • Recognize and protect the cultural resources of riparian zones. • Protect aquatic ecosystems[1].	• Implement Cultural Resource Management Zones and accompanying constraints and protection throughout the Deadman Watershed[2].	Implement Monitoring program to ensure that water-related values are not harmed by range activities[2].
Watershed Restoration • Increased restoration of watersheds at risk.	• Replanting of indigenous vegetation[3]. • Improved management of cattle impacts via fencing[3]. • Stabilization of access point[3]. • Prescribed habitat treatments[3]. • Establish ongoing watershed restoration themes around air, water, species and habitat restoration, pollution and recycling[3]. • Establish control watershed & communications/monitoring plans[3].	Number of watersheds requiring watershed assessments[1].

[1] Taken from the 1995 Kamloops Land and Resource Management Plan. These management objectives, strategies and indicators are for discussion purposes only.

[2] Taken from: Skeetchestn Indian Band. 2013. Land-use Planning Community Input Meeting Notes. File records. 30p.

[3] Taken from: Moore, D. 2001. Through the Eyes of Sk'lep: A Vision of Ecosystem Stewardship in the Deadman Watershed. Final Copy. Prepared for the Skeetchestn Indian Band. 27p

2.1.2.3 Cultural Resource Management Zone / Riparian Management Areas

The Skeetchestn Indian band perceives all riparian areas as being crucial to the health of their community. It is felt that water is the linkage between all users of the ecosystem including its human, plant, soil, wildlife and spiritual components (Blackstock 2002). There is also a strong recognition among First Nations of the intrinsic functional role that riparian areas play in the ecosystem as a whole providing habitat connectivity and mitigating negative impacts to hydrological function and fisheries (Oaten et al. 2008).

With respect to First Nations values, the Skeetchestn Indian Band has identified seven plant species that are culturally important and are also typically associated with riparian areas (Klinka et al. 1989). These species include *Ledum glandulosum, Valeriana sitchensis, Rubus pubescens, Arnica corifolia, Arnica latifolia, Shepherdia canadensis,* and *Lonicera involucrata* (Oaten et al. 2008). Culturally Important Plants are essential elements of traditional medicine, food, building materials, technological, ceremonial and cultural heritage for members of the Skeetchestn Indian Band (Moore 2001). Additionally, the headwaters of the Deadman Watershed have special spiritual value to the Skeetchestn community (M. Anderson, pers. com.).

The largest threat to the integrity of riparian areas is timber harvesting practices that do not consider these other values and are narrowly focused on the management of large, fish-bearing S1-S3 streams as defined by the Forest Practices Code (1998). The Skeetchestn Indian Band has had significant concerns about the Federal and Provincial governments' management of riparian areas within their Traditional Territories. Specifically the maintenance of their ecological integrity, the management of non-timber forest values, and the management of S5 and S6 headwater stream riparian areas (as defined in the Forest Practices Code 1998). There are numerous pieces of legislation that guide the management of riparian areas in British Columbia most notably the BC Forest and Range Practices Act and the BC Fish Protection Act. The following is a brief outline of those pieces of legislation and how they relate to the objectives of the Skeetchestn People.

<u>The Forest and Range Practices Act</u>

Relative to the more than 10,000 years development of Traditional Ecological Knowledge held by the Skeetchestn, the evolution of the Province's forest management practices is fairly recent (~100 yrs).

While the Secwepemc Peoples have always viewed their surrounding ecosystem as an interconnected system, the Western perspective has traditionally been reductionist, driven by interest in commercial-scale harvesting of one or two parts of the system as a whole. This has been reflected in the various pieces of forest management legislation that have evolved over the past 100 years.

The first Forest Act was introduced in 1912 and for approximately 75 years the management focus was solely on timber supply. Although the revamped, 1979 Forest Act and a new Ministry of Forests Act incorporated new planning processes requiring forest managers to consider non-timber values, the negative impact of timber harvesting on riparian areas and fisheries did not become apparent until 1987. In response, the Department of Fisheries and Oceans (DFO), the

Ministry of Forests, the Ministry of Environment, and the forest industry jointly developed the Coastal Fisheries Forestry Guidelines (CFFG). These guidelines were intended to communicate the best management practices for forestry along the BC coast and provide protection to salmon bearing streams from forestry practices. However in 1994, a report was released that confirmed growing concerns about non-compliance with the CFFG and fisheries management became a public issue. One year later, the Province passed the Forest Practices Code (FPC) of British Columbia Act, which dramatically altered the regulation of Forestry by implementing prescriptive requirements for the industry. It was the first time that the protection of fish and fish habitat was provided for in a piece of provincial forestry legislation.

Up till the 2004 passing of the Forest and Range Practices Act (FRPA) in British Columbia, the forest industry was regulated by the Code comprised of the Act, its regulations, guidebooks and practice standards. The requirements on industry have been significantly reduced in the transition from FPC to FRPA. Industry is no longer required to provide prescriptive and detailed Forest Developments Plans or Watershed Assessments, but instead provides the Forest Stewardship Plan outlining their strategies for achieving the Province's objectives. Although the FPC is no longer in place, the associated guidebooks and their guidelines remain a commonly used operational tool. The Forest Planning and Practices Regulations (FPPR) associated with FRPA have adopted the riparian classification and management standards as set out in the Riparian Management Area (RMA) Guidebook (1995) developed under the Forest Practices Code (Cohen Commission 2011).

There has been growing concern during the period of implementation of the RMA (1998-present) that the values of British Columbia's small headwater streams have been under protected (Gomi *et al.* 2002, Haag and Dickinson 2000). In particular, those streams classified as S4, S5 and S6 streams under the MOF Guidelines. Streams of S5 and S6 classification are those that are determined to be non-fish bearing, and not considered to be within a community watershed. S5 streams are those that have a bankfull width greater than 3m while S6 streams are those with a bankfull width less than 3m (Riparian Management Area Guidelines 1995). Streams of S4 classification are those that are less than 1.5m in width and are either in a community watershed or are fish bearing (Karakatsoulis et al. 2005).

Since the implementation of FRPA continues to rely on the riparian guidelines of the FPC, First Nations and western scientists continue to be concerned about the impact on the riparian environment. The RMA Guidebook identifies that only S1-S3 streams are required to have both riparian reserve zones (no harvesting) and riparian management zones, where harvesting is allowed. Stream classifications S4-S6 required riparian management zones only with no riparian reserve zones required (Forest Practices Code 1998). This management approach also overprotects S1-S3 streams in terms of large woody debris supply, while under protecting smaller S4-S6 streams and giving them little attention or protection for non-timber resources (Hogan 2002). Additionally, according to Gomi *et al.* (2002) harvesting activities that occur in smaller headwater streams are being inconsistently regulated, which may be due to the fact that riparian habitat of small streams is narrower and less distinct than that associated with large streams or rivers (Knutson and Naef 1997). Ironically research shows that the influence exerted by the riparian area on the aquatic system by smaller streams is greater than larger ones (Knutson and Naef 1997), and therefore requires equal protection.

The Department of Fisheries and Oceans (DFO) has also conveyed concern over the fact that

non-fish bearing streams are receiving little or no protection. They are concerned that current forest practices within S4-S6 streams may be contributing to the harmful alteration and disturbance of fish habitat and therefore may be in contravention of the federal Fisheries Act. To rectify this, DFO has recommended that S5 and S6 streams that are tributaries to fish bearing streams or sensitive spawning areas and S4 streams should have vegetation retention of the riparian management zone of close to 100% unless other more appropriate management issues provide greater ecological significance (J. Guerin. pers. com).

Over the past 15 years, impacts on the riparian zones of the Deadman Watershed and larger Skeetchestn Traditional Territory have been compounded by the accelerated harvesting of Pine due to the mountain pine beetle (*Dendroctonus ponderosae*) outbreak, which has led to a drastic increase in the annual cut of forests within British Columbia. Increased harvesting within the riparian zone, the ecotone between terrestrial and aquatic ecosystems where the vegetation complex and microclimate are products of the combined pressure and influence of perennial and/or intermittent water, are of concern as the riparian zone serves many functions including erosion and runoff control, protection of water quality, provision of shade and litter fall for aquatic biota, and habitat for wildlife. The riparian zone has also been identified as supporting high plant species diversity as compared to upland areas (Sarr and Hibbs 2007) and many plant species are associated with these riparian zones (Oaten et al. 2008).

The broad-scale impacts of the Mountain Pine beetle as a result of Western perspectives on fire-suppression and the mismanagement of small streams and their adjacent riparian areas are of significant concern to the Skeetchestn Band. It has become apparent that the relevant provincial and federal legislation is not adequately protecting First Nations values. As a means of providing more protection for streamside habitat, the Skeetchestn Indian Band has adopted Cultural Resource Management Zones, which will be discussed in a later section, and is considering the efficacy of adopting the provincial Fish Protection Act which may afford more protection to these important areas.

Fish Protection Act

The Government of British Columbia's Fish Protection Act (1997) and associated Riparian Areas Regulations (RAR) (2005) are much more stringent than those found in the Forest and Range Act and could possibly be used to further protect rivers, streams, lakes and other bodies of water containing fish habitat within the Deadman Watershed and the broader Skeetchestn Traditional Territory. Administered by the Ministry of Environment (MOE), the Act and associated regulations enable the provincial government to require local governments to take action to protect fish habitat by incorporating RAR into their bylaws. The RAR contains provisions that prohibit dams, designate sensitive streams and limit Water Act approvals and licenses on sensitive streams, as well as allow for development of legally binding recovery plans for sensitive streams. Under the Fish Protection Act, MOE may establish "provincial directives", to protect fish bearing streams from development. These directives, also known as Riparian Areas Regulations, are intended to proactively address the issue of fish habitat loss and give a detailed description of how fish habitat is to be regulated by local governments. Prior to any development a Qualified Environmental Professional (QEP) must render "an opinion in an Assessment Report that the development will not result in a harmful alteration of riparian fish habitat". Through this report the QEP helps to plan any new development so that it will avoid impacting fish habitat. Using the RAR Assessment Methodology, the QED will determine the

appropriate width of the Streamside Protection and Enhancement Area (SPEA), which is an area on either side of a river, stream or lake that provides fish habitat in which development is regulated. In general a SPEA will extend 30m from both sides of the stream bank.

Locally, the City of Kamloops has been given directives from the provincial government to regulate the protection of fish habitat within the city limits and has created Riparian Areas Regulation Development Permit Areas to comply. These regulations apply to all privately owned land abutting the North and South Thompson Rivers, Kamloops Lake, all their tributaries, and all water bodies containing fish habitat within the City of Kamloops. (City of Kamloops 2004)

Although this Act is more stringent than FRPA overall, it is of note that there is an accompanying list of exemptions to the regulations, most notably, farming, mining (non-processing activities), hydroelectric facilities and forestry.

The current status of the Riparian Area Regulation with respect to First Nations is as follows:

First Nations reserve lands are currently "exempt from the Regulation but only to the extent that they are already exempt fro~~r~~m local government bylaws." "With regard to treaty Settlement Lands, compliance with the Regulation and local government bylaws will be negotiated in each treaty. The policy of the MOE is to seek to include the standards set out in the Regulation in treaties" (Ministry of Environment 2005).

Cultural Resource Management Zones

Skeetchestn Indian Band does not want to exclude harvesting from riparian areas; however these areas, high in biodiversity, have the highest concentration of First Nation values for culturally important plants, wildlife and archaeological features and therefore need more stringent management guidelines that protect non-timber values more effectively. To that end, a study was commissioned to define the management objectives needed to protect First Nations values in riparian areas (Karakatsuolis et al. 2005, Oaten et al. 2008).

The results of that work supported the delineation of *Cultural Resource Management Zones*[1] or 100m buffer zones adjacent to all streams, wetlands and water bodies in Skeetchestn Territory. Approved by Skeetchestn Band and Council, the management objectives within these zones would support the protection of Skeetchestn values in all riparian areas, irregardless of stream order, within the Skeetchestn Traditional Territory, including the Deadman Watershed. The management objectives of CRMZ's also afford special consideration for harvesting trees infected with mountain pine beetle.

An important part of the CRMZ strategy is the Cultural Heritage Overview requirement. To provide and account for aboriginal values, all CRMZ's require the completion of a Cultural Heritage Overview delivered by the Skeetchestn Indian Band prior to any management activities. Overall the Band wants to bridge their traditional ecological, cultural and social interests and values with forest development operations, management and legislation (Karakatsoulis et al.

1 See Appendix 5 for full description of Cultural Resource Management Zones

2005). Management of timber, water, wildlife, indigenous plants, and fisheries values will be directed by scientific methodology and traditional knowledge.

The primary objectives for Special Resource Management – Cultural Resource Management Zones (CRMZ's) are as follows:

Objectives and strategies for CRMZ's

Objectives	Strategies	Indicators
• Maintain culturally important plants and medicine for a variety of other uses[1]. • Protect wildlife habitat and movement corridor values[1]. • Provide habitat connectivity[2]. • Mitigate negative impacts to hydrological function and fisheries in terms of: water temperature; contributions to stream processes and biology; amelioration of spiking in the hydrograph; sediment filtration capacity[1]. • Ensure windfirmness of residual stands[1]. • Ensure adequate inventory of long-term, in-stream coarse woody debris[3]. • Maintain soil bulk densities within a natural range[4]. • Maintain and/or restore the integrity and function of riparian vegetation to provide for bank and channel stability, long-term supply of large CWD, suitable stream temps and input of nutrients[5].	• No more than 50 % basal area removal in any single pass within 50 meters of water[1]. • Use of selection and shelterwood silvicultural systems[1]. • Use of light impact equipment and labor intensive harvesting methods[1]. • Assessment and protection of all potential and existing wildlife snags[1]. • Inventory and protection of all regeneration and non-merchantable stems[1]. • Aspen, birch and sub-alpine fir will be considered preferred species within these zones and are to be encouraged for their wildlife habitat, medicinal and other Traditional values[1]. • Minimal road building within Cultural Resource Management Zones[1]. • Minimum 20 meter reserves on all fish bearing and direct tributary streams where recommended by Department of Fisheries and Oceans[1]. • In the case of Mountain Pine Beetle Blocks, where harvesting is occurring primarily to address forest health issues further constraints will therefore apply. • The retention of all advanced regeneration and species other than pine within 100 meters of water and water bearing features[1]. • The removal of green attack pine only within 50 meters of water and water bearing features[1].	<u>CIP indicators:</u> Species richness[2] % of CIP cover[2] % frequency of CIP[2] Soils Soil bulk density levels[4]

[1] Taken from: Skeetchestn Cultural Resource Management Zones, guidelines. 1p.

[2] Taken from: Oaten, D., Karakatsoulis, J., Anderson, M. and Ortner, C. 2008. Stand Level Harvesting in Mountain Pine Beetle Affected Stands and Impact on Riparian Based Cultural Resource Management Zones Within Skeetchestn Traditional Territory. Forest Sciences Program Report #M085112. 36p.

[3] Taken from: Skeetchestn Indian Band. 2013. Land-use Planning Community Input Meeting Notes. File records. 30p.

[4] Taken from: Karakatsoulis, J., Paul, S., Osborne, R., Ortner, C., and Anderson, M. 2005. Skeetchestn Indian Band: Research and Development in Riparian Zone Management. Final Copy. Prepared for the Skeetchestn Indian Band. 152p.

[5] Taken from the 1995 Kamloops Land and Resource Management Plan. These management objectives, strategies and indicators are for discussion purposes only.

2.1.3 Ecosystem Management

Ecosystem management or ecosystem-based management has become a paradigm shift for Western science. The difference is a reversal of the overall goal of management. "Rather than maximizing human use subject to environmental constraints, an ecosystem-based approach seeks ecological integrity with sustainable human use" (Lertzman 2010). This approach may be more consistent with First Nations cultural and stewardship values. "Traditional knowledge of sustainable resource use and management is reflected in our intimate relationship with nature and its predictable seasonal cycles and indicators of renew of life and subsistence" (Brown and Brown [compilers] 2009).

Traditional Ecological Knowledge and Ecosystems

The Secwepemc story of Sk'lep, the coyote, supports a foundation of traditional ecological knowledge relating to ecosystems. Translated from the Secwepemc oral history by the late Ida Williams of the North Thompson Indian Band, the following is a paraphrased excerpt as related by John Jules.

> *Coyote went gathering where he participated in the games and won everything. Raven was there and wanted to take Coyote's eyes from him. He takes Coyote's eyes and sets him free to find his way home. Coyote loses his way. Coyote feels around on the ground for something to make eyes out of. He found some kinnikinnick berries and stuck them into his eye sockets. He could see but not too well. As Coyote made his way downhill, he asked various trees what they were so he knew where he was. When he finally got to the saskatoon bush, he knew he had made it home.* [Blackstock and McAllister 2004:35]

The Secwepemc Cultural and Education Society (1994:35) language department explains the degree of knowledge contained within the story:

> *When you are travelling in the country, in the mountains and woods, you will notice that vegetation occurs within fairly well defined areas. Tree species that grow at certain elevations are usually good indicators of how high up you are, and what kind of precipitation and soils the area you are in has. Foresters and ecologists call this combination of climate, elevation and soil or land that determines what trees and other plants you will find Biogeoclimatic Zones. Secwepemc people also had and have a good sense of how trees are indicators of how high up on a mountain you are. As people travel in the mountains, hunters use predominant tree species to orient themselves as to what elevation they are at.*

The Secwepemc vocabulary also supports the degree of ecological knowledge held by the people and provides insight into how the people classified their ecosystems:

ne skwelk'wélt alpine zone

ne skwelkwelk'wélt subalpine

ne melénllp	balsam tree zone
ne qwli7t	lodgepole pine zone
ne tsquellp	douglas-fir zone (includes grasslands)
ne s7etqwllp	ponderosa pine zone (includes grasslands)
ne ctsetém	in the valley (grasslands)

These data strongly suggest that Secwepemc First Nations understood transitional plant associations over an elevation gradient. [Blackstock and McAllister 2004:36]

A Western Science Perspective

Western science has evolved its own ecological classification system. BC is divided into fourteen biogeoclimatic zones based on climate, geography and vegetation. The zones are then subdivided into subzones based on plant associations.

> The Deadman River Watershed is composed of montane forests and grasslands ecosystems. The interior Douglas Fir (IDF) biogeoclimatic zone occurs in the lower elevations of the Deadman and Criss Creek valleys. The Sub-boreal Pine and Spruce (SBPS) and Montane Spruce (MS) biogeoclimatic zones define the upper Deadman River. The predominant forest types in this area include (successional) lodgepole pine (*Pinus contorta var. latifolia*) and mixed pine and trembling aspen (*Populus tremuloides*) stands associated with valley slopes and low hills. Spruce (*Picea glauca x engelmannii*) occurs predominantly on riparian bands and wet sites. The understory vegetation consists of a high percentage of pinegrass (*Calamagrostis rubescens*), with birch-leafed spirea (*Spirea betulifolia*), soopalallie (*Sheperdia canadensis*), twinflower (*Linnaea borealis*) and kinnikinnick (*Arctostaphylos uva-ursi*) also common. The eastern portion (above 1525 m on Porcupine Ridge) lies within the Englemann spruce-Sub-alpine Fir zone (ESSF) (Lemke 1998). For the purposes of setting biodiversity objectives, the Ministry of Forests of British Columbia further recognizes five natural disturbance types in B.C. Most of the Deadman Watershed is considered Natural Disturbance type 4 (NDT4) (Phil Holman, pers. com. Ministry of Forests, Kamloops Forest District). This ecosystem includes grassland, shrubland, and forested communities that normally experience frequent low-intensity fires. On grasslands, these fires limit encroachment by most woody trees and shrubs (Biodiversity Guidebook 1995). Late seral and climax grasslands and shrublands are typically restricted to droughty sites that occur at low elevations or on steep south-facing slopes or fire-prone areas (Moore 2001).

Tradition of Fire

> There is documented evidence that First Nations used fire to manipulate grassland succession to maintain browse for ungulates, suppress sagebrush, and encourage herb growth (Black et al. 1999; Jules 2001; Turner 1999). Jules (2001) says the Elders adapted their use of fire to suppress the intruding sagebrush. The Secwepemc people managed tree encroachment on the prehistoric grasslands through landscape burning of the grasslands. The burning also created healthy forage for the ungulate species. Jules (2001) explains that burning "was happening for, we like to say, thousands of years" and it stopped after the 1870's. Although the topic of fire was not a central focus of elders interviewed for this study, it does demonstrate pre-contact human intervention on the grasslands. [Blackstock and McAllister 2004]
>
> Recent human activities have altered fires regimes in much of the Deadman Valley. Several decades of fire exclusion has caused many Ponderosa pine and interior Douglas-fir stands to fill in with young conifers as well as a conversion of many grasslands and ponderosa pine stands to Douglas-fir (M. Anderson, pers.comm). This has resulted in fuel accumulations, increased probability of crown instead of surface fires, loss of understory forage, and insect disease and damage. There is also a change in forage quality. Native bunchgrasses associated with fire-maintained stands produce high protein levels during the growing season. In closed and ingrown stands, the lower-growing pinegrass predominates. It produces lower protein levels in the summer and does not retain its protein through the winter. Pine grass is also extremely unpalatable to domestic livestock therefore often not grazed unless there is absolutely no other available feed. According to valley residents, these patterns are evidenced in diminishing quality and quantity of grazing areas, the distribution and abundance of certain species of wildlife and culturally important vegetation (ie. berries and medicinal plants). [Moore 2001:4]

Fire was the most important ecosystem management tool in pre-contact grasslands (Blackstock and McAllister 2004). There is a strong desire by the Skeetchestn to re-establish fire as a management tool.

Skeetchestn perspectives on ecosystem health in the Deadman Watershed.

> The Band relies on the resources of the Deadman Watershed and over time this watershed has been subjected to a "disproportionate amount of human impact". The local community has concerns around the decreased health of fish and wildlife species and forest vegetation in their traditional territory and believe that this decreased health is an indicator of a broader ecosystems dysfunction that can be attributed to forestry practices, tourism, mining, and urban and agricultural development. These concerns led to the development of a community vision and a framework for ecosystem stewardship in the Deadman Watershed in 2001.

> The community's depiction of the natural environment (past, present and future) illustrated a trend away from cultural environmental values, and an atrophy of the custom associated with sustainable resource use. Restoring customary practices and incorporating traditional ecological knowledge and wisdom is advanced by Skeetchestn Community as their approach to achieving the sustainable use of the watershed's natural resources (Moore 2001).
>
> The Skeetchestn Indian Band is interested in applying an ecosystem-approach to the management of the resources within the Deadman Watershed. Current ecosystem approaches demand a better assessment of ecosystem function than currently exists, and a search for a control watershed is proposed for comparative purposes. The ecosystem-approach represents a vision that integrates ecological, economic and social / cultural factors in an equitable way, and seeks a balance between biodiversity conservation and the sustainable use of natural resources. A control watershed and a community-based ecosystem framework are suggested to guide the management, planning, and the restoration of the biodiversity within the Deadman Watershed. Workshops involving Skeetchestn and the Deadman Creek Improvement District in 2001 have helped to set the stage for this ecosystem planning collaboration. [Moore 2001:6]

The following ecosystem management objectives and strategies apply across the Skeetchestn LUP area.

Objectives and strategies for ecosystem management in the Deadman Watershed

Objectives	Strategies	Indicators
Capacity building • Build capacity for ecosystem-based management[1]. • Extend the Band jurisdiction to watershed and traditional territory to protect ecosystem values and related cultural and heritage values.	• Re-instate Deadman Watershed Committee: continue efforts to develop a resource centre; develop policy and regulatory tools; collaborate on eco-friendly and sustainable resource restoration and management. • Provide training and infrastructure development to facilitate local employment and build a business plan[1].	To be determined
Use local knowledge and innovation • Encourage incorporation of new locally developed knowledge, innovations and practices where they are relevant to the sustainable use of the valley's natural resources[1]. • Continue documenting traditional language, innovations and practices associated with sustainable resource use practices and broader ecosystem values[1].	Development of an S.I.B. Territorial Patrol program • Full implementation of Skeetchestn Cultural Resource Management Zones[2]. • Full implementation of Skeetchestn Territorial Heritage Conservation Law[2].	To be determined
Sustainable use • Improved sustainable resource use practices[1].	• To be determined	To be determined
Fire-maintained ecosystems • Restore fire-maintained ecosystems (NDT4) across the landscape[2].	• Develop and implement a fire management strategy.	To be determined
Carbon management • Begin utilizing and managing carbon credits[2].	• To be determined	To be determined

[1] Taken from: Moore, D. 2001. Through the Eyes of Sk'lep: A Vision of Ecosystem Stewardship in the Deadman Watershed. Final Copy. Prepared for the Skeetchestn Indian Band. 27p

[2] Taken from: Skeetchestn Indian Band. 2013. Land-use Planning Community Input Meeting Notes. File records. 30p.

Connectivity • Maintain connectivity as well as protective and thermal cover for wildlife across the Deadman Watershed[1].	• To be determined • Implementation of Skeetchestn C.R.M.Z.s	To be determined
Maintain/Enhance Biodiversity *see biodiversity, section 2.1.3.1	• To be determined • Implementation of Skeetchestn C.R.M.Z.s	To be determined

[1] Grassland Conservation Council of British Columbia. 2004. BC Grasslands Mapping Project: A Conservation Risk Assessment (Area Summary – H), Final Report. Available from www.bcgrasslands.org/projects/conservation/mapping.htm [accessed February 2013]

2.1.3.1 Biodiversity

Biodiversity is under significant pressure in the Deadman Watershed.

Ecosystem diversity

Grassland Ecosystems

The lower, middle, and upper-elevation grasslands that occur in the watershed are important for many reasons. To name a few, they provide connectivity between habitats for many species, they are home to many threatened and at-risk grassland species, they provide important winter range for ungulate species and host a variety of culturally important plants. The Secwepemc have relied on these grasslands for at least 10,000 years (Blackstock and McAllister 2004). There has been significant pressure on the grassland ecosystems in the Kamloops area for the past 150 years which has resulted in a significant threat to biodiversity.

> Prehistoric grasslands, as the Elders remember, were wide-open expanses where people, elk, horses, and sharp-tailed grouse freely roamed seeking water, foods and medicines. Most communities in the area managed their grasslands using fire, and some even practiced irrigation using small clay-packed ditches to grow beans and corn. [Blackstock and McAllister 2004:27]

It is also important to note that the grasslands at that time also had abundant riparian areas with numerous small patches of wetlands (Blackstock et al. 2004).

Rapid change began to occur on the grassland ecosystems of the Deadman once the European settlers began making their start on the grasslands. Although cattle were introduced in 1840 when the Hudson's Bay Company brought them to Kamloops, the grazing pressure was minimal until the gold rush began in the 1850's. Beginning about 1852, there was an influx of miners as Kamloops became a very busy launching area for the gold rush. With the influx of miners came the development of a very successful horse and cattle industry. This put a lot of pressure on the grasslands and the Secwepemc way of life. Elk began to disappear as areas became over grazed. Wetlands disappeared as water was diverted to irrigate crops and water livestock, along with the draining of wetlands to cultivate crops or create settlements (Blackstock et al. 2004).

In addition, the curtailment of landscape burning of the grasslands after 1870 put additional pressure on the grassland system. This landscape burning had been occurring for thousands of years prior as a means of maintaining browse for ungulates, managing tree encroachment, suppressing sagebrush, and encouraging herb growth (Blackstock et al. 2004).

Because ecosystems with frequent stand-maintaining fires (NDT4) have been so influenced by human activities and the suppression of fire, a relatively large number of wildlife species associated with grasslands are listed as threatened or endangered.

Current status:

- The Grasslands Conservation Council has designated the grasslands found around the middle and lower Deadman River as priority grasslands for conservation. They have significant value

as suitable **burrowing owl and Lewis' woodpecker habitat**, and offer significant habitat connectivity for various species. The Skeetchestn extend that habitat value to the long billed curlew, the western gopher snake and the western rattlesnake within the grassland ecosystem.

- No provincially listed ecological communities are formally noted; however, most of the area is likely red- or blue-listed as most grassland ecological communities are provincially listed. Absence of identified listed ecological communities is due to lack of formal surveys. The GCC would like to work with the Skeetchestn Band to better survey the grasslands in Deadman Watershed.

Riparian Ecosystems

> It should also be noted that there are a variety of riparian ecosystem associations specifically those involving cottonwood and other species (e.g. Cottonwood/red osier +/or cottonwood/ prickly rose) that are at risk throughout the Interior and especially in the Deadman valley. [Moore 2001]

Species diversity:

The Skeetchestn Cultural Heritage Resource Inventory lists in excess of 140 plants that are part of their traditional use for food, medicine, spiritual, ceremonial, sacred, structural or technological use (Skeetchestn Indian Band 2002, 2002b). Plant diversity is generally highest in riparian areas. This is due to the gradient of moisture that extends between the influencing water source and the upland area (MOF 1998b). There are many wildlife species that are of great importance to many First Nations groups that also reside in the Deadman Watershed. In particular the Skeetchestn Indian Band has noted the following as having significant cultural values; great blue heron, sandhill crane woodpecker, crow, raven, hawks, owls, cougar, bear, grouse, rabbit, deer,badger, groundhogs, porcupine, muskrat and moose among others. There is also concern about the drastic decline of local porcupine populations in recent years as noted by local residents.

The Skeetchestn Indian Band has also expressed concern over a number of plant species that are endangered or vulnerable and which reside within their traditional territory of the Deadman Watershed, including the decline of traditionally valued plant species such as spetsum or Indian hemp, Indian potatoes or "spring beauty", Bitter root, Biscuit root and Indian tobacco as well as others. The decline of these plant species is a concern to the Skeetchestn people, as are a number of extirpated animal species that the band would like to see reintroduced such as elk, caribou, bull trout and white sturgeon. (Moore 2001).

Although not included in this list, Thompson River Coho and steelhead populations are considered severely depressed and there is concern about their sustainability.

Species at risk

The Skeetchestn Indian Band has also expressed concern over a number of species that are endangered or vulnerable and which reside within their traditional territory of the Deadman Watershed. These species include:

- Great basin spadefoot toads
- Painted turtles
- Rubber boa
- Great Basin Gopher Snake
- Racer Snake
- American Bittern
- Peregrine falcon
- Sharp-tailed grouse
- Long-billed curlew
- Flammulated owl
- Lewis' woodpecker
- Spotted bat
- Western small-footed myotis
- Towsends big-eared bat
- Short eared owl
- American Badger
- American Avocet
- Western Rattlesnake
- Timber Rattlesnake
- Grizzly bear
- Sandhill crane
- Great blue heron
- Coho salmon
- Steelhead salmon
- Screech owl
- Sage Thrasher (highly unlikely)
- Monarch Butterfly
- Wolverine
- Western toad

[Karakatsoulis et al. 2005]

There is some question as to the presence of Grizzly bears in the Deadman Watershed (MFLNRO pers. comm.) however numerous Skeetchestn elders have confirmed sightings in the past 5-10 years in the Humphries Meadow and Tobacco Mountain areas (Skeetchestn 2013). Timber Rattlesnakes are also included as distinctly different from Western Rattlesnakes in that their habitat is more forested; they are larger and more aggressive (Skeetchestn 2013).
Skeetchestn elders also have confirmed the presence of Bull trout in Criss Creek in the 1950's although government monitoring have shown no evidence of bull trout presence in the river since systematic monitoring programs began in the 1980's (Moore 2001).

The Band would like to expand its list of Endangered and Vulnerable species to include plants and insects.

Invasive species

Invasive species are a threat to biodiversity. The Grasslands Conservation Council of BC mapping project mentioned 3 invasive plant species that had been noted in its identification of priority grasslands; Leafy spurge, spotted knapweed, diffuse knapweed (Grasslands Conservation Council of BC 2004). The Band would like to do more biological control of invasive species as a method of mitigating the impact of invasive species on biodiversity (Mike Anderson, pers.com.).

The following table outlines the objectives and strategies of general management for biodiversity in the LUP.

Objectives and Strategies for biodiversity in the Deadman Watershed.

Objectives	Strategies	Indicators
• Maintain or enhance a diversity of viable grassland and montane ecosystems across Skeetchestn territories[1]. • Maintain viable populations of all species across Skeetchestn territories within their existing geographic range[1]. • To conserve the diversity and abundance of native species and their habitats throughout the Deadman Watershed[1].	• To be determined • Reintroduce the use of controlled burning to the watershed	To be determined
• Eliminate the use of chemical control for invasive species[2,3].	• Preferred use of biological and mechanical weed removal strategies[2,3].	To be determined

[1] Taken from the 1995 Kamloops Land and Resource Management Plan. These management objectives, strategies and indicators are for discussion purposes only.

[2] Taken from: Moore, D. 2001. Through the Eyes of Sk'lep: A Vision of Ecosystem Stewardship in the Deadman Watershed. Final Copy. Prepared for the Skeetchestn Indian Band. 27p

[3] Taken from: Skeetchestn Indian Band. 2013. Land-use Planning Community Input Meeting Notes. File records. 30p.

2.1.4 Grasslands Management

Grassland communities currently face the greatest threats to their biodiversity (Harding and McCullum 1994). B.C. grasslands are unique in Canada because they are dominated by bunchgrass, bluebunch wheatgrass and many other plant species that occur only rarely east of the Canadian Rockies. Moreover, B.C.'s grasslands represent the northern limit of extensive bunchgrass vegetation in North America (Harding and McCullum 1994). Most of the grasslands in Canada have been eliminated primarily due to agricultural cultivation and livestock grazing. In the Southern Interior of B.C., fire suppression, urban development and associated outdoor recreational pursuits are all major factors contributing to the disappearance of grasslands. It should also be noted that in some instances agriculture and the responsible grazing of domestic livestock has contributed to the enhancement and preservation of grasslands (e.g. Douglas Lake Ranch) (Moore 2001).

The following is a description of priority grassland areas in the Deadman Watershed as identified by the Grassland Conservation Council of BC (Grassland Conservation Council of BC 2004).

Deadman River outflow: Total area:523 ha (within Skeetchestn First Nation: 473ha) 340-1320m

- Characterized by the confluence of the Deadman and Thompson Rivers, which provides species at risk habitat as well as connectivity both within and outside the area.
- Expert input highlighted the importance of this delta.
- Biodiversity: no provincially listed ecological communities are formally noted; however, most of the area is likely red- or blue- listed as most grassland ecological communities are listed by the province. The absence of identified listed ecological communities is due to the lack of formal surveys.
- Connectivity: This grassland provides internal connectivity and connectivity to priority areas to the north and on the south side of the North Thompson River.
- Ranching: intercepts 2 range units (Cache Cree and Rock Pile)
- Invasive Plants: leafy spurge and spotted knapweed presence have been noted in the Invasive Alien Plant Inventory Treatment and Monitoring program.

Lower Deadman River: Total area: 642 ha (within Skeetchestn First Nation: 187 ha) 360-880m

- An important contributor to connectivity in this area
- Eastern most section includes the 152 ha Ghost Den wildlife area
- Biodiversity: no provincially listed ecological communities are formally noted; however, most of the area is likely red- or blue- listed as most grassland ecological communities are listed by the province. The absence of identified listed ecological communities is due to the lack of formal surveys.
    - Contains 211 ha of deer winter range habitat[1].
    - Contains 350 ha of bighorn sheep winter range habitat[1].
    - Bighorn lambing site on northern side of Kamloops Lake.

[1] Important to note that figures for ungulate winter range are merely what has been defined by the BC Ministry of Environment and not necessarily what Skeetchestn hunters see on the ground.

- Connectivity: Eastern side of the area provides excellent internal connectivity from lower to middle grasslands to forest.
    - Western portion provides important internal and external connectivity to other areas within the Deadman Creek drainage.
    - Major impediments to movement include paved roads to the south and west of this area.
- Ranching: intersects 1 pasture (Cactus Hills) in 2 range units (Cache Creek and Rock Pile)
- Invasive plants: diffuse knapweed and spotted knapweed have been noted in the Invasive Alien Plant Inventory Treatment and Monitoring program.

<u>Middle Deadman River: Total area: 1017ha (within Skeetchestn First Nation: 1010 ha) 440-820m *** high priority grassland</u>

- Area is a large contiguous piece of grassland.
- Important because it contains several Lewis' woodpecker nests within a mostly middle grasslands environment.
- Important because of its suitability for burrowing owl habitat.
- Provides high contribution to the representation of grasslands 500m to greater than 1000m from the forest edge.
- Biodiversity: no provincially listed ecological communities are formally noted; however, most of the area is likely red- or blue- listed as most grassland ecological communities are listed by the province. The absence of identified listed ecological communities is due to the lack of formal surveys.
    - Contains 33 ha of deer winter range habitat[1].
    - Contains 114 ha of bighorn sheep winter range habitat[1].
- Connectivity: these lower and middle grasslands area contains much internal connectivity
    - Contributes to external connectivity by providing wildlife with a way of moving up or down the Deadman River drainage. Priority areas occur to the south and north.
- Ranching: intersects 1 range unit (Cache Creek range unit)

[1] Important to note that figures for ungulate winter range are merely what has been defined by the BC Ministry of Environment and not necessarily what Skeetchestn hunters see on the ground.

The following table outlines the objectives and strategies of general management for grasslands in the LUP.

Objectives and Strategies for grasslands in the Deadman Watershed.

Objective	Strategies	Indicators
• Maintain natural grassland ecosystem processes, including all grassland-dependent species[1].	• Reduce forest encroachment by re-introducing fire-maintained grasslands[2]. • Maintain connectivity between grasslands[2]. • Develop access management plans that reduce damage ~~to~~ due to recreational traffic[2]. • Manage grasslands for a diversity of habitat for grassland dependent species[1]. • Manage grazing use to produce a mosaic of grazing levels, including some ungrazed areas, with linkages between them[1].	• Change in grassland ecosystem[1]. • Change in population of weed spp[1]. • Total area of grassland ecosystems[1]. • Measure of flora and fauna diversity[1].

[1] Taken from the 1995 Kamloops Land and Resource Management Plan. These management objectives, strategies and indicators are for discussion purposes only.

[2] Taken from: Skeetchestn Indian Band. 2013. Land-use Planning Community Input Meeting Notes. File records. 30p.

2.1.5. Inland Fisheries

Deadman Watershed sustains the following inland fish species; Kamloops trout, Kokanee, and squawfish.

The following table outlines the objectives and strategies of general management for inland fisheries in the LUP.

Objectives and Strategies for inland fisheries in the Deadman Watershed

Objectives	Strategies	Indicators
• Establish Skeetchestn Band's jurisdiction for managing its own fisheries within its Traditional Territory (ie providing fishing licenses in the Deadman Watershed)[1]. • Maintain angling opportunities within the Deadman Watershed[1]. • Maintain or increase the natural production of spawning streams through habitat protection measures (ie streamside management) and enhancement activities[2]. • Protect and maintain genetic diversity of wild fish stocks[2]. • Become actively involved in the co-management of all non-anadromous fish within the watershed and the whole of Skeetchestn traditional territory	• Pursue new angling opportunity by stocking Marshy Lake (explore Kokanee reintroduction) [1]. • Re-introduction of native species into presently non-productive lakes[1]. • Continue stocking of targeted lakes[2]. • Explore rebuilding of Skeetchestn hatchery program for steelhead production[1]. • Negotiate this with the Provincial Gov't thru the existing Reconciliation Framework Agreement process.	• Maintenance of fish habitat[2]. • Number of wild genetic stock lost[2]. • Number of steelhead on spawning grounds[2].

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[1] Taken from: Skeetchestn Indian Band. 2013. Land-use Planning Community Input Meeting Notes. File records. 30p.

[2] Taken from the 1995 Kamloops Land and Resource Management Plan. These management objectives, strategies and indicators are for discussion purposes only.

2.1.6 Anadromous Fisheries

> The Deadman River and its tributaries provide valuable habitat for a variety of salmonid species. Within the Deadman River, pink (*Oncorynchus gorbuscha*), coho (*O. kisutch*), steelhead (*O. mykiss*) and Chinook (*O. tshawaytscha)* salmon can be found up to the Snohoosh Dam. It is also suggested that the Deadman River is the most important tributary to the Thompson River for Coho and steelhead production. The Thompson River Coho salmon have recently been listed as an endangered species on the Federal governments Species at Risk Act (SARA) list. [Karakatsoulis et al. 2005: 6]

Many first nations groups of the Interior Plateau rely heavily on the availability of pacific salmon as a means of sustenance (Turner 1997). However, this dependence has been declining due to a decrease in the populations of returning salmon. Skeetchestn has suspended their fishery in Deadman River since 1985 due to decreased salmon stocks. In 2004, Thompson River Coho and Steelhead were taken out of the fishery due to critically low population levels. "Declines have been attributed ~~to the 1 in 500 year flood experienced by the Deadman River in 1990 (ARC Environmental Ltd. 1998) and~~ to the possibility that reductions in upstream nutrient components such as macro-invertebrates and small organic debris have impaired proper watershed functioning" (Karakatsoulis et al. 2005). This concern over sustainable management of water, fisheries and forest resources has led the Skeetchestn Indian band to initiate a Fisheries conservation program, alongside watershed restoration projects and the implementation of Cultural Resource Management Zones adjacent to water features within the Deadman Valley.

Skeetchestn Fisheries Conservation Program

> Fisheries programming at Skeetchestn took on its present form in salmon enhancement activities sponsored originally by DFO's Community Economic Development Program. The program was initiated in 1983 in association with the Central Interior Tribal Council and focused on stock assessment and pilot enhancement programming. Assessment of Deadman rivers salmonid populations by provincial, federal and tribal agencies in the area over the following decade pointed out a trend of depressed or declining populations of salmon populations and steelhead. Some spawning populations like bull trout are said to have disappeared entirely (John Collins Sr., pers. com.). In addition, significant instability has been observed in riparian habitats, exacerbating the fish affects of climate extremes and human activity in the watershed. [Moore 2001]
>
> Development of a fisheries conservation program began with a Skeetchestn By-law in 1985 prohibiting salmon harvest, followed by development of a Fisheries Conservation Center celebrated publicly in 1993, following post-flood reconstruction of the salmon hatchery. The hatchery program has focused on coded wire tag programs to track scope and nature of catches in the approach fisheries. A wet and dry lab accommodates salmon assessment in the Thompson River mainstem, and a rearing channel was developed ~~to~~

for additional rearing and study of habitat treatment techniques. The fisheries program cultured indigenous streamside shrubs for valley residents and encouraged local conservation groups to participate stream-side replanting work parties as part of public awareness. Prescribed post-flood habitat work was photographed and assessed for ongoing evaluation and current instream habitat work is prescribed to meet the needs of all indigenous wild fish populations. [Moore 2001]

The Skeetchestn Band has been monitoring and evaluating salmon stocks in the Deadman River system in co-operation with D.F.O. since 1985.

The following table outlines the objectives and strategies of general management for anadromous fisheries in the LUP.

Objectives and Strategies for anadromous fisheries in the Deadman Watershed.

Objectives	Strategies	Indicators
• Re-establish salmon production to full capacity[1].	• Enhance stocks through the re-establishment of fish culture program[1].	To be determined.
• Optimize the value of Skeetchestn's commercial fishery[2].	• Expand value-added potential of commercial fishery[2].	
• Reestablish the community harvest of salmon to historic levels[1].	• Protect riparian areas as per Cultural Resource Management Zone guidelines[3].	
• Conserve stocks and habitats at risk[1].	• Maintain base flows for all fisheries (including coho) [2].	
• Build capacity to participate in resource stewardship[1].	• Restore degraded stream habitat by replanting indigenous vegetation, bank stabilization, …[1]	

[1] Taken from: Moore, D. 2001. Through the Eyes of Sk'lep: A Vision of Ecosystem Stewardship in the Deadman Watershed. Final Copy. Prepared for the Skeetchestn Indian Band. 27p.

[2] Taken from: Skeetchestn Indian Band. 2013. Land-use Planning Community Input Meeting Notes. File records. 30p.

[3] Taken from: Skeetchestn Cultural Resource Management Zones, guidelines. 1p.

2.1.7 Tourism

The following table outlines the objectives and strategies of general management for tourism activities in the LUP.

Objectives and Strategies for tourism in the Deadman Watershed.

Objectives	Strategies	Indicators
• Maintain tourism values within the Deadman Watershed[1].	• Maintain Deadman valley bottom in its present state of development[1].	To be determined

[1] Taken from: Skeetchestn Indian Band. 2013. Land-use Planning Community Input Meeting Notes. File records. 30p.

2.1.8 Recreation

The following table outlines the objectives and strategies of general management for recreation activities in the LUP.

Objectives and Strategies for recreation in the Deadman Watershed.

Objectives	Strategies	Indicators
• Maintain recreational values within the Deadman Watershed[1].	• Maintain Deadman valley bottom in its present state of development[1].	To be determined.

[1] Taken from: Skeetchestn Indian Band. 2013. Land-use Planning Community Input Meeting Notes. File records. 30p.

2.1.9 Agriculture

The following table outlines the objectives and strategies of general management for agricultural lands in the LUP.

Objectives and Strategies for Agriculture Management

Objectives	Strategies	Indicators
• Ensure that riparian areas are protected within agricultural lands[1].	• Create awareness of the importance of cottonwood ecosystems and riparian areas to all fish and wildlife and endangered species[1]. • Continue working with land owners to protect streamside areas[1]. • Promote environmental farm plans[1]. • Promote the implementation of C.R.M.Z.s on agricultural lands[1]. • Discourage use of chemical pesticides on all territorial lands and chemical fertilizers particularly within C.R.M.Z.s[1].	Area of farm land with trees growing within C.R.M.Z.'s [1]. Area of farmland in C.R.M.Z.'s fenced off from uncontrolled grazing[1].

[1] Taken from: Skeetchestn Indian Band. 2013. Land-use Planning Community Input Meeting Notes. File records. 30p.

2.1.10 Range

The following table outlines the objectives and strategies of general management for rangelands in the LUP.

Objectives and Strategies for Range Management

Objectives	Strategies	Indicators
• Minimize conflicts with cultural heritage values[1].	• Protect some culturally important areas and species through exclusion fencing e.g. tea beds (Heller Cr.) , potato patches(Steamshovel, Uren flats, Smith Camp), bitterroot, mariposa lily) [1]. • Conduct inventory of cultural values on rangeland areas[1].	Acres of exclusion pertaining to culturally important species[1]. Acres of rangeland inventoried[1].
• Reintroduce controlled burning[1].	• Develop relationship and work closely with M.O.F. unit crews[1]. • Train our own people in controlled burning[1].	Acres of controlled burning done[1].
• Protect species at risk habitats[1].	• Identify and map important habitats[1]. • Fence off and provide off site water developments (troughs) if required[1].	Number of offsite water developments done and acres protected[1].
• Exclude chemical use from rangelands[1].	• Utilize biological controls and manual control[1].	Length of roads power lines pipelines etc. treated manually[1] Number of insect releases[1]
• Manage and protect wild horse populations[1].	• Control studs[1]. • Round ups when required[1]. • Genetic testing and research on wild horse populations[1]. • Confer with Neamiah valley people[1].	Acres of land treated with preferential grazers[1].

[1] Taken from: Skeetchestn Indian Band. 2013. Land-use Planning Community Input Meeting Notes. File records. 30p.

• Protect and enhance ungulate populations[1].	• Implementation of C.R.M.Z.'s [1]. • Research migration patterns of deer (tracking) [1]. • Create Skeetchestn Territorial Patrol office and unit[1]. • Examine reintroduction of elk[1].	Area of C.R.M.Z.s created[1]. Number of deer collared and tracked[1].

[1] Taken from: Skeetchestn Indian Band. 2013. Land-use Planning Community Input Meeting Notes. File records. 30p.

2.1.11 Minerals

Geology of the area

> The areas surrounding the Deadman Watershed are comprised of volcanic extrusive bedrock with minor sedimentary portions. It consists of the Nicola and Kamloops bedrock group, being characteristic of andesite, basalt, rhyolite, associated tuff and breccia, limestone and agrillite (Young *et al.* 1992).
>
> Surficial geology of the lower portions of the Deadman Valley includes various landforms. The valley bottoms consist of fluvial and fluvioglacial deposits, surrounded by colluival and morainal deposits at higher elevations (Young *et al.* 1992).
>
> The area around Vidette Lake within the Deadman Watershed is underlain by mafic volcanic rocks of the Upper Triassic Nicola Group. This area is exposed through the erosion of flat lying Miocene sedimentary rocks and plateau basalts of the Chilcotin group. The uppermost Chilcotin Group strata is comprised of an extensive layer of plateau basalts of the Chasm Formation, underlain by fluviatile and lacustrine sedimentary strata and volcanic ash of the Deadman River Formation which occupies the northwest trending Miocene channel (Geological Survey Branch 2002).
>
> The Deadman River Formation within the Deadman River Valley is comprised of 350 metres of ash, sandstone, siltstone, shale and diatomite. Fluvial paleoenvironment is found within deeply incised north and west tending valleys (Read 1988). [Karakatsoulis et al. 2005:5]

The Skeetchestn People have history of gold panning in the rivers of the watershed. Skeetchestn would like to have input before mineral claims are granted within their traditional territory as mineral claims constitute an infringement of Skeetchestn's Aboriginal title. (Skeetchestn 2013)

The following table outlines the objectives and strategies of general management of mineral resources in the LUP.

Objectives and Strategies for Mineral Resource Management

Objectives	Strategies	Indicators
• **Exclude** mining industry[1] activities from valley bottom[2]. • Ensure that existing mining within the watershed is ecologically sensitive and fully inclusive of First Nations involvement[2].	• Make whole valley bottom a "NoGo" zone[2]. • Negotiate Participation agreements with any mines operating in the watershed[2]. • Negotiate with Province to have them insert a disclaimer on Minerals[3] Online Tenure system pointing out that Stk'emlups Territory has not been ceded or surrendered and as such is subject to underlying Aboriginal Title[2].	To be determined

[1] Mining industry includes: exploration, mining, transportation, processing, consultants and equipment suppliers.

[2] Taken from: Skeetchestn Indian Band. 2013. Land-use Planning Community Input Meeting Notes. File records. 30p.

[3] According to the *Mineral Tenure Act*, a mineral is any "ore of metal and every natural substance that can be mined.

2.1.12 Wildlife

The watershed is also home to a diverse array of wildlife species, ranging from weasels, marten, fisher, mink, beaver, muskrat, to black bears, wolves, cougars, and fox. In addition, areas of the watershed have been defined as critical winter range for both deer and moose (Karakatsoulis et al. 2005, GCC 2004). Bighorn sheep also use the area for grazing and lambing (Grasslands Conservation Council 2004). Recurring wildlife poaching problems in the valley are blamed in part for depressed local ungulate herds (Moore 2001).

There are many wildlife species that are of great importance to many First Nations groups. In particular the Skeetchestn Indian Band has noted the following as having significant cultural values; great blue heron, woodpecker, crow, raven, hawks, owls, cougar, bear, grouse, rabbit, deer and moose among others. Moose and deer are the most important wildlife species that are hunted by the Skeetchestn Indian Band and are used for clothing, medicine and manufacturing items for sale or trade. Hunting and trapping within the Deadman Watershed is currently conducted by the Skeetchestn Indian Band along with other First Nations bands (Karakatsoulis et al. 2005). The Kamloops Land and Resource Management Plan (KLRMP 1995) has defined areas of the Deadman Watershed as critical winter range habitat for both deer and moose.

Moose

Habitat use by the Deadman River/Criss Creek moose population is characterized by a focus on riparian willow forage during the critical winter months, a marked increase in the use of wetland complexes as the search for quality forage begins in spring and early summer, and extensive use of dense coniferous stands in summer and winter, as the animals seek shelter from environmental extremes. The utilization of the mixed coniferous/deciduous forest type remains significant all year, as these stands are comprised of a matrix of good cover and adequate forage.

An effectively managed access plan on important seasonal moose ranges is key to maintaining sustainable populations. Excessive harvest and abandonment of suitable habitat can result from uncontrolled vehicular access and accompanying human disturbance.

> The upper Deadman River and Criss Creek valleys provide a wide range of winter habitat for moose populations including riparian shrub habitat and wetland complexes (Lemke 1998). Riparian areas (riparian willow habitat and spruce/sedge meadows) within the Deadman and Criss Creek areas also provide optimum area for moose calving habitat (Lemke 1998) as they provide secluded shelter, high browse availability and close proximity to water. Lemke (1998) also suggesets that mature conifers that border riparian and wetlands provide crucial thermal cover throughout the year. Lemke's (1998) research in the Upper Deadman River area on moose habitat suggests that harvesting should be conducted in a manner to minimize damage to understory vegetation. She also suggests that riparian buffers of 300m be established around all riparian and wetland complexes greater than one hectare, 200m for high forage sites, and riparian/wetland edges should retain 75% of its vegetation. [Karakatsoulis et al. 2005: 29]

Deer

Lower Deadman River contains 211 ha of deer winter range habitat.[1]

Middle Deadman River contains 33 ha of deer winter range habitat[2] (Grasslands Conservation Council 2004).

South slope of Criss Creek, Sabiston, Back Valley, Stinkin Lake, Paha Meadow, Hidden Valley (Anglesey lease) are also important winter habitat as recognized by Skeetchestn hunters and community (Skeetchestn 2013).

Bighorn Sheep

In 1966, 11 California Bighorn Sheep were released into the area between the Deadman River and the Tranquille River to try and re-establish an historical population. The herd around Kamloops Lake now numbers about 225 individuals (Shackleton 1999). Lower and middle Deadman River areas also contain 350 ha and 114 ha of Bighorn sheep winter range, respectively. A Bighorn sheep lambing site exists on the northern side of Kamloops Lake (GCC 2004).

Lambing area as defined by Skeetchestn hunters and community:

- Bamford Field: before turn-off to Cache Creek and north end of reserve.
- Craig's Field: where Criss Creek meets Deadman. (Skeetchestn 2013)

Fur-bearers Trapping

Historically, numerous traplines were located in the Deadman Watershed and under the control of the Skeetchestn Band members. Today there may only be one left under the control of a Skeetchestn Band member (Skeetchestn 2013). Tables 3 and 4 communicate fur harvest returns for 1985-2009 * (Richard Weir, BC Ministry of Environment, pers. com.)

Table 3. 1985-2009 fur harvest returns in the Deadman Watershed.

ATN	Fisher	Wolverine	Marten	Mink	Mustela	River otter	Skunks	Black bear
TR0329T001	34	0	212	52	104	32	0	2
TR0329T003	8	0	149	16	31	10	0	0
TR0329T005	1	0	1	9	7	1	0	0

Comment [ma3]: Is there any possibility of getting mapping of existing traplines from M.O.E.?

[1] As defined by BC Ministry of Environment.
[2] As defined by BC Ministry of Environment.

Table 4. 1985-2009 fur harvest returns in the Deadman Watershed.

ATN	Raccoon	Lynx	Bobcat	Wolf	Coyote	Fox	Squirrels	Beaver	Muskrat
TR0329T001	0	15	29	3	76	11	372	189	127
TR0329T003	19	7	8	0	10	2	224	23	227
TR0329T005	1	1	1	0	44	1	46	45	261

The following table outlines the objectives and strategies of general management of wildlife in the LUP.

Objectives and Strategies for Wildlife Management

Objectives	Strategies	Indicators
• Ensure habitat needs of all naturally occurring wildlife species are provided for. Special attention will be paid to red- and blue-listed species[1]. • Manage wildlife populations to meet both hunting and non-consumptive needs (including cultural needs (i.e. dance costumes)[2].	• Recognize the importance of the beaver as a keystone species and manage the beaver population to support their role in water management and habitat creation for other species[2]. • Limit killing of beavers and use translocation methods to relocate beavers to more suitable areas[2]. • Make deciduous tree species a preferred species, especially in riparian habitats (CRMZ's)[2]. • Ensure critical habitat is identified and managed appropriately[1]. • Ensure connectivity of wildlife habitat is maintained[1]. • Manage forests for a diversity of age classes and forest stand structures across landscape units[1].	To be determined

[1] Taken from the 1995 Kamloops Land and Resource Management Plan. These designations are for discussion purposes only.

[2] Taken from: Skeetchestn Indian Band. 2013. Land-use Planning Community Input Meeting Notes. File records. 30p.

2.1.12.1 Critical Deer Winter Range

> Research has also been conducted into the effects of partial cutting on the abundance of mule deer populations (Armleder et al. 1998). Interior Douglas-fir within the Cariboo Forest Region, British Columbia was harvested in a single-tree selection system in which 20% of the volume was removed. Armleder et al.'s (1998) results determined that there was no significant difference between mule deer abundance of undisturbed stands and those 20% harvested following track assessments for the winters of 1984-1991. Results suggest that single-tree selection systems may be an appropriate method to harvest interior Douglas-fir at low volumes without having adverse effects on the winter requirements of mule deer populations. [Karakatsoulis et al. 2005:30]

The following table outlines the objectives and strategies for management of Critical Deer Winter Range in the LUP.

Objectives and Strategies for Critical Deer Winter Range Management

Objective	Strategies	Indicators
• Maintain winter habitat for deer[1].	• Implement uneven aged management strategies for harvesting of timber[1].	Number of blocks selection logged[1].

[1] Taken from: Skeetchestn Indian Band. 2013. Land-use Planning Community Input Meeting Notes. File records. 30p.

2.1.12.2 Critical Moose Winter Range

The upper Deadman River and Criss Creek valleys provide a wide range of winter habitat for moose populations including riparian shrub habitat and wetland complexes (Lemke 1998). Riparian areas (riparian willow habitat and spruce/sedge meadows) within the Deadman and Criss Creek areas also provide optimum area for moose calving habitat (Lemke 1998) as they provide secluded shelter, high browse availability and close proximity to water. Lemke (1998) also suggests that mature conifers that border riparian and wetlands provide crucial thermal cover throughout the year. Lemke's (1998) research in the Upper Deadman River area on moose habitat suggests that harvesting should be conducted in a manner to minimize damage to understory vegetation. She also suggests that riparian buffers of 300m be established around all riparian and wetland complexes greater than one hectare, 200m for high forage sites and riparian/wetland edges should retain 75% of its vegetation (Karakatsoulis et al. 2005).

The following table outlines the objectives and strategies for management of Critical Moose Winter Range in the LUP.

Objectives and Strategies for Critical Moose Winter Range Management

Objective	Strategies	Indicators
• Rebuild moose populations[1].	• Implement 200 meter buffers on important wetland complexes as recommended in 1998 moose study[1]. • Implement Skeetchestn road deactivation and management strategies[1]. • Reduce kilometers of road plowed in winter[1]. • Reduce unrestricted uncontrolled sled access in winter[1]. • Reduce wolf populations[1].	To be determined

[1] Taken from: Skeetchestn Indian Band. 2013. Land-use Planning Community Input Meeting Notes. File records. 30p.

2.1.13 Timber

The following is an excerpt from a 2011 rough draft affidavit from Mike Anderson, RPF #3147 regarding the key historical events relating to timber harvesting in the Deadman Watershed[1]:

> Mike Anderson has lived in the Skeetchestn Indian Band Traditional Territory for 61 years, living always on the land and not within the town of Savona.
>
> Between 1970 and 1975, the practice of clear-cutting was introduced in this part of the Province (Kamloops area of the Southern Interior) and lodgepole pine and spruce were now looked upon (by government and industry) as commercially viable species whereas before this time only Douglas Fir had been targeted and was usually harvested utilizing selection logging. This change in species focus also made clear-cutting a much more viable option and moved logging into higher elevation, more sensitive headwater areas of the watersheds. It was also my observation that with the onset of clear-cutting within my watershed the hydrological regime tended to change so that the spring melts caused higher water flows for shorter periods of time as well as lower water levels at the end of the summer and early into the fall. [Anderson 2011]

Currently, the forest licensees working within the watershed include: Ministry of Forests B.C. Timber sales ~~Small Business Forest Enterprise~~ Program, West Fraser Mills Ltd., Sk7ain Ventures ltd., Ainsworth Lumber Co., Tolko Industries Ltd., Bonaparte Indian Band, Ashcroft Indian Band, T'kemlups Indian Band and Skeetchestn Indian Band (Karakatsoulis et al. 2005, Mike Anderson pers. com.). The Skeetchestn Band currently manages 2-3 non-replaceable forest licenses and a woodlot license (Anderson 2011).

As mentioned by Anderson in his above affidavit, logging has been moving into higher elevations. As of 2005, forest harvesting has been occurring within the montane spruce zone of the watershed. The MS biogeoclimatic zone is located between the IDF and ESSF zones at an elevation of 1300-1650metres. Forest stands are generally dominated by young to moderate aged lodgepole pine stands due to the affects of the areas higher fire frequency. The MS zone provides habitat for numerous forest dwelling species and provides habitat for deer and moose during summer and fall seasons (Karakatsoulis et al. 2005).

The Norm: Clear-cutting

> As of 2005, only 9.27% of harvesting is done as a selected silviculture system within the Kamloops Forest Region Timber Supply Area (TSA). Most harvesting was done as clear cutting or clear cutting with reserves, totalling 84% of the total harvest (MOF 2000a). Revenues paid in 1999/2000 from stumpage within the Kamloops Forest Region totalled over $180 million. The productive forested land base of the Kamloops Forest Region is 4,306,000

[1] See the Affidavit in its entirety in Appendix 3.

hectares. The Deadman River watershed has 14,950 ha of riparian habitat, 12.2% of this area has already been either clearcut (871 ha, 5.8%) or selectively harvested (954 ha, 6.4%) (Ministry of Water, Land and Air Protection (MWLAP) 2000) (Karakatsoulis et al. 2005)[1].

Comment [ma4]: These figures probably need updating possibly in the next phase of the plan.

Riparian management has become critical to Skeetchestn Band as the 100 metre buffer in the CRMZ is considered to have the highest concentration of First Nation values for plants, wildlife, and archaeological features. These areas have been significantly disrupted through conventional logging methods and restoration of these areas through re-evaluating harvesting methods is seen as means to return functionality and health to the watershed. The band is specifically interested in assessing how to conduct economically viable harvesting operations within riparian areas and at the same time maintain the integrity of the Deadman Watershed and its riparian ecosystems (Karakatsoulis et al. 2005).

Proposing new innovative silviculture systems:

Alternative systems that have been used in British Columbia are: single-tree selection, which results in uneven aged stands; group-selection, which creates a series of small openings in a forest stand (this allows several trees in a group to reach maturity at the same time); and, strip-selection, a method of harvesting trees along long, narrow strips. Shelterwood systems are also used, which maintain a portion of the existing stand during the seedling establishment stage. Within each of these alternative systems the objective is to extract timber while still maintaining some of the structural characteristics and ecological attributes of the pre-disturbed (harvested) forest. These approaches may be the most effective method for managing forested ecosystems with riparian areas, specifically around S5 and S6 streams (Karakatsoulis et al. 2005).

Benefits of selective harvesting systems:

- Literature reviews have indicated the following benefits:
  - Selective harvesting can help maintain summer and annual stream flow levels and mitigate low summer flow indicative of clear-cut response.
  - Patch cutting can regulate stream flow at pre-harvest levels
  - Use of smaller, low-impact equipment may allow forest managers to economically extract timber from these areas while at the same time maintaining ecological integrity.

Benefits of small-scale logging and horse-logging:

- A comparison of selective harvesting methods found that when harvesting in riparian areas, horse logging has a higher logging cost than clear cut mechanical and selective logging using hand-fall and mechanical forwarding, but creates 4 times more labour than clear cut mechanical and about 2.2 times more labour than selective logging using hand-fall and mechanical forwarding (Cirque Resource Assoc. et al. 2002).
- When all revenue sources are considered, government revenue for horse logging is within 5% of convention clear cutting.

[1] This information is dated and will need to be updated prior to finalization of this plan. It is included as a research need in section 3.4.

- Results from another comparative study conducted in the Deadman Watershed indicate that horse logging can generate 7.4 jobs for every job created through conventional logging. When taking into account ownership costs, results from the study suggest that small-scale logging job creation would fall between conventional and horse logging job creation rates (Cirque Resource Assoc. et al. 2002).

The benefits of increased employment and revenues through small-scale and horse logging can provide rural communities such as the Skeetchestn Indian Band with a means to rectify high unemployment rates and seasonality of employment opportunities. These alternative harvesting activities can provide Skeetchestn Indian Band and other small rural communities with the ability to shift attitudes towards sustainable economic development. Benefits of these alternative harvesting practices can also help maintain and promote ecosystem functionality and stewardship. With harvesting techniques that deviate from industry standards for clear cutting, local communities are insured forestry resources are available for future generations while maintaining other traditional non timber forest products.

Proposed Silviculture Systems for Deadman Watershed:

Timber production is one of the most important outputs of the Skeetchestn Forest and both the focus and challenge of the silviculture program is to ensure that timber production is conducted in a manner that is both environmentally acceptable and economically viable. More specifically, the silviculture program will need to balance all forest values including watershed values, timber production, and habitat values.

In 2006, a silviculture strategy was developed for the Skeetchestn Band (Ackhurst et al. 2006)[1]. Broad objectives and strategies were developed for pure pine stands, spruce and Douglas fir stands, mixed pine-spruce-fir stands, second growth stands, riparian areas, areas impacted by Mountain Pine Beetle, areas susceptible to windthrow, areas identified for restoration treatments, as well as the design of spur roads (Ackhurst et al. 2006).

[1] See Appendix 6 for the Skeetchestn Silviculture Strategy.

The following table outlines the objectives and strategies for management of forest types and other considerations within the LUP.

2.1.13.1 Pure Pine Forests

Objective	Strategies	Indicators
• Ensure economically viable and environmentally acceptable timber production that balances all forest values[1].	• Clear cut pine stands in large openings[1]. • Leave all spruce, fir and deciduous standing[1]. • Retain about 10% of the original stems (dead or alive) within the openings and retain uncut wildlife tree patches as required[1]. • Augment expected natural regeneration with planted Douglas-fir to produce mixed species stands[1]. • Depending on site conditions, species mixtures would include a hardwood component to facilitate site amelioration as well as to increase fire resistance[1].	To be determined

2.1.13.2 Spruce and Douglas Fir Stands

Objectives	Strategies	Indicators
• Ensure economically viable and environmentally acceptable timber production that balances all forest values[1].	• Group and single tree selection with openings permitted up to two tree lengths across[1]. • Harvest to remove 50% of the basal area on a 30 year cutting cycle for medium sites and 35 years for poor sites[1]. • Salvage the dead pine if it is possible to have no damage to the remaining stand[1]. • Identify and retain some old growth structure with wildlife trees and patches as part of an overall wildlife habitat strategy[1].	To be determined

[1] Taken from: Ackhurst, P. and Hennig, C. 2006. Skeetchestn Indian Band: Silviculture Strategy. Final Copy. Prepared for the Skeetchestn Indian Band. 3p.

2.1.13.3 Mixed Pine-Spruce-Fir Stands

This type includes pine leading stands with a spruce and fir component.

Objectives	Strategies	Indicators
• Ensure economically viable and environmentally acceptable timber production that balances all forest values[1].	• Salvage the dead pine if it is possible to have no damage to the remaining stand[1]. • Leave all spruce, fir, and deciduous standing, or manage the spruce and fir stands as a group and single tree selection with openings permitted up to two tree lengths across[1]. • Harvest to remove 50% of the basal area on a 30 year cutting cycle for medium sites and 35 years for poor sites[1]. • Identify and retain some old growth structure with wildlife trees and patches as part of the overall wildlife habitat strategy[1]. • In high elevation mixed species stands and sites retain sub-alpine fir as a preferred species[2].	To be determined

2.1.13.4 Second Growth Stands

Objectives	Strategies	Indicators
• Ensure economically viable and environmentally acceptable timber production that balances all forest values[1].	• Most second growth stands in Skeetchestn territory are presently Douglas fir and should be managed under a single tree or group selection regime as noted above[1].	To be determined

[1] Taken from: Ackhurst, P. and Hennig, C. 2006. Skeetchestn Indian Band: Silviculture Strategy. Final Copy. Prepared for the Skeetchestn Indian Band. 3p.

[2] Taken from: Skeetchestn Indian Band. 2013. Land-use Planning Community Input Meeting Notes. File records. 30p.

2.1.13.5 Riparian Areas

Objectives	Strategies	Indicators
• Ensure economically viable and environmentally acceptable timber production that balances all forest values[1].	• The protection of watershed values is the number one goal in the Skeetchestn Forest and as such the riparian no log zone is 10 metres along streams and a management zone of another 40 metres resulting in no more than 50% basal area removal within 50 meters of water. Wildlife tree patches can be incorporated into these zones[1]. • Other than the increased size of the riparian zone, the default practice requirements specified in the Forest Planning and Practices Regulations (FRPR) of the Forest and Range Practices Act will be followed[1]. • All riparian areas shall have 100 metre Cultural Resource Management Zones established around them and as such will be subject to constraints as outlined in Skeetchestn policy[1]. • Skeetchestn has used different logging equipment and different levels of forest cover removal to determine impact on lesser vegetation and economic return to participating communities[2].	To be determined

2.1.13.6 Mountain Pine Beetle Epidemic Considerations

Objectives	Strategies	Indicators

[1] Taken from: Ackhurst, P. and Hennig, C. 2006. Skeetchestn Indian Band: Silviculture Strategy. Final Copy. Prepared for the Skeetchestn Indian Band. 3p.

[2] Taken from: Karakatsoulis, J., Paul, S., Osborne, R., Ortner, C., and Anderson, M. 2005. Skeetchestn Indian Band: Research and Development in Riparian Zone Management. Final Copy. Prepared for the Skeetchestn Indian Band. 152p

• Minimize impact of beetle epidemic on forest cover[1].	• During the pine beetle epidemic, no logging of spruce and fir stands will be carried out[1]. • Focus on dead pine and retain all spruce and fir stands to provide some forest cover on the landscape[1]. • Goal is to reduce the harvest area in the Skeetchestn Forest and leave some dead pine standing[1].	To be determined

2.1.13.7 Windthrow Considerations

Objectives	Strategies	Indicators
• Minimize windthrow risk[1].	• Pre-harvest assessments to identify potential risks[1]. • Site specific modifications to harvest practices, such as edge feathering[1]. • Some blowdown may be permitted as a cost of preserving the spruce and fir stands[1].	To be determined

2.1.13.8 Spur Road Considerations

Objectives	Strategies	Indicators
• Minimize impact of spur roads[1].	• Spur roads should be temporary in nature and designed, located and constructed to occupy the smallest possible footprint, while still incorporating adequate water drainage provisions[1]. • Wherever possible, roads should be located with due consideration to harvesting needs as well as general access for recreational and other purposes as identified in the Skeetchestn Forest Access Plan[1]. • Roads should not be located within the Cultural Resource Management Zones (ie. Within 100 metres of water except to access stream crossings especially in cases where roadside harvesting is being employed) [1].	To be determined

[1] Taken from: Ackhurst, P. and Hennig, C. 2006. Skeetchestn Indian Band: Silviculture Strategy. Final Copy. Prepared for the Skeetchestn Indian Band. 3p.

2.1.13.9 Restoration Considerations

Objectives	Strategies	Indicators
• To be determined	• Areas will be identified for restorative treatments on site specific project basis[1].	To be determined

2.1.14 Visually Sensitive Areas

No visually sensitive areas have been designated by the Skeetchestn Band at this time.

2.1.15 Heritage Areas

To provide and account for aboriginal values, the Skeetchestn Indian Band carries out Cultural Heritage Overview and Archaeology Overview Assessments (Moore 2001). Heritage areas are defined as "the land, including land covered by water, that has heritage value to the Secwepemc, and, without restricting the generality of the foregoing, includes traditional use areas, areas of historical significance, sacred and spiritual places, archaeological sites, and structural or landscape features of heritage significance."

2.1.15.1 Legal protection of Heritage Areas

Objectives and strategies of the Territorial Heritage Conservation Law

Objective	Strategies	Indicators
• Encourage and facilitate the protection and conservation of the Band's heritage under the legal framework of the Territorial Heritage Conservation Law. • Prevent the unlawful infringement of the Band's heritage • Promulgate the Band's laws and give notice of the laws to any proponent dealing with the Band's heritage within the Band's territory; and • Set out the Band's procedures which proponents are required to follow in consulting with the Band concerning land developments and resource management projects within the Band's territory, including those proposed for rivers and waterways that may impact the Band's heritage.	• Review and implement T.H.C. law • Implement Skeetchestn Cultural Heritage Assessment process • Implement Skeetchestn Cultural Resource Management zones	To be determined

2.1.16 Culturally Important Plants (CIP)

There is a long standing relationship between First Nations people and the vegetative components for surrounding forested land (Turner et al. 1990). Plants have been used by First Nations for many purposes including nutritional, medicinal, subsidence, technological, structural, ceremonial, ~~and~~ spiritual, indicator and other purposes.

Medicinal purposes:

- Plants have been used for the treatment of among many other illnesses and conditions stomach disorders, colds, wounds, venereal diseases, cramps and menstrual disorders and were primarily obtained through the collection of roots stems and leaves (Turner et al. 1990, Teit and Steedman 1930).

Food purposes:

- Food within the area was generally obtained from roots and fruits. Plants and their parts were also used for chewing, non-medicinal drinks and smoking (Turner 1997).

Structural purposes:

- Plants were also heavily used in manufacturing a variety of dwellings and other structures.
- Vegetative material was used for weapons, making canoes, snowshoes, baby carriers, roofing, fishhooks and drums (Turner et al. 1990, Teit and Steedman 1930).
- Plants were also used for making paints, dies and scents and in many cases used as a form of trade between First Nations people of adjacent areas (Turner 1997).

Spiritual purposes:

- Many spiritual values, religious beliefs and mythical traditions are also linked with plants due to the great ~~resilience~~ reliance on them for everyday survival (Turner et al. 1990).
- Plants were used as drinks, washes and baths and many plants were believed to have a magical purifying power.
- Many of these drinks and washes were used for success in hunting and war, and various puberty ceremonies. Under aboriginal religious tradition, plants were also viewed as having souls that are capable of thought and feeling and therefore viewed them with reverence and respect and were not to be exploited or used without appreciation (Turner 1998).

- Plants have also been a predominant part of First Nations culture for their use as charms, which were used to ensure long life, friendship, love, wealth and success in the hunt (Teit and Steedman 1930).
- Plants have also been an important part of First Nations cultural and social tradition and are also thought to have a relationship to animals. This can be through dietary requirements or through mythology origins (Turner et al 1990). [Karakatsoulis 2005]

Comment [ma5]: This plants part can be greatly elaborated upon during the next phase of the project as I don't have all the data summarized yet nor do I have the time to do it right now

To date the Natural Resources Department of the Skeetchestn Band has identified **148 species** of plants within their Traditional Territory that are of cultural significance. Many of these plants are still being used on a regular basis for medicine, food and other components of everyday life within the community. Of the 148 plants inventoried so far, 90 have medicinal uses, 53 are used for food, 11 have structural value, 13 are used spiritually, 12 are used in ceremony and 17 have other cultural uses not previously listed (Skeetchestn 2002b).

Objectives	**Strategies**
• Ensure the abundance of Sxusem and Sqlelten – Whooshum. • Sustainable management of traditional plants. • Revive traditional practices. • Improve cultural awareness and respect for hunting and gathering.	• Provide ethnobotany courses for Band and community members. • Develop ethnobotany collections for curriculum for Skeetchestn community school. • Research traditional plant cultivation techniques. • **Implement the Skeetchestn Cultural Heritage Assessment process.**

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2.1.17 Traditional Native Land Use

British Columbia First Nations place high values on forested ecosystems for reasons other than timber values. Non-timber values that are important to First Nations groups are those that are related to their spiritual and ceremonial values, fisheries, plant and riparian values, and wildlife values. Wildlife values can include sustenance while plant values can include those for food, building materials, medicinal, technological, spiritual and ceremonial uses (Moore 2001).

The tie with nature is pronounced in their ceremonial process that is conducted prior to harvesting non-timber products such as forage plants (Blackstock 2002, Teit and Steedman 1930). The spiritual value of plants is therefore evident as they have been used indiscriminately and it is believed that nature's resources represent a spiritual power that can adversely affect their lives if not treated with respect. It is evident that there is spiritual value in plants species through the eyes of First Nations people. It is this connection of different values that makes it difficult for indigenous peoples to separate culture, language and spirituality from the land base (Fortier 2002).

Due to this tie with nature, there are many concerns of how current forest management practices can create negative socio-cultural impacts on a community such as the Skeetchestn Indian band. Socio-cultural impacts can include the well-being of a community, social cohesiveness, institutional factors, cultural and religious well being, and a number of factors related to the particular place or resource such as the following:

- Community well-being and social and family cohesiveness maintained through use of the resource.
- Everyday life and material implements derived from the resource.
- Living and social activities and practices associated with the place or resource.
- Religious, ceremonial well-being gained through use of the place or resource.
- Other uses of the site or resource such as education or art.
- Intergenerational continuity in knowledge, language, traditions, values, and education related to the place or resource.
- Physical integrity of historical or cultural resources located in the place or associated with use of the resource.

(Columbia River Comprehensive Impact Assessment 1998).

First Nations communities such as the Skeetchestn Indian band have traditional systems of stewardship that combine cultural uses with local ecosystem values. This promotes sustainability and influences practices that can enhance the productivity, stability and diversity of cultural and non-timber forest resources. Aboriginal land use links spirituality, culture and survival with natural ecosystems to provide a perpetual balance between humans and the environment and promotes environmental husbandry of nature's resources (Turner and Jones 2000).

There are at least twenty-one different plant species presently inventoried within the Skeetchestn traditional territory that are associated with either spiritual or ceremonial uses (Skeetchestn Cultural Heritage Resource Inventory). [Karakatsoulis et al. 2005]

2.2 Settlement Resource Management Zones

Settlement Resource Management Zones within the Deadman Watershed are the Skeetchestn Village and various ranching settlements.

2.2.1 Resource Management Objectives and Strategies

The objectives for Settlement Resource Management Zones are to:

Manage land to meet the objectives set out in approved community land use plans through additional consultation and public process.

Objectives and strategies for Settlement RMZs

Objectives	Strategies
• To be determined	• To be determined

2.3 Protection Resource Management Zones

Protection Resource Management Zones are areas that have been identified for their natural, cultural, heritage and/or recreational values. This section recommends appropriate management categories for each Protection RMZ, as well as intended objectives and strategies[1].

2.3.1 Resource Management Objectives and Strategies

Objectives and strategies applying to all Protection RMZs are outlined in the following table.

Objectives	Strategies
• Protect viable representative examples of BC's natural diversity and recreational opportunities to protect special natural, cultural heritage and recreational features[2].	• Logging, mining and energy exploration and development are prohibited in all Protection RMZ's[2]. • The Grazing Policy recognizes certain categories where grazing will be prohibited[2]

[1] Note that all protected areas, whether designated by Skeetchestn or not, remain part of the Skeetchestn traditional territory and have not been surrendered through treaty or otherwise thus is subject to underlying Aboriginal Title.

[2] Taken from the 1995 Kamloops Land and Resource Management Plan. These management categories and strategies are for discussion purposes only.

2.3.2 Area-Specific Objectives and Strategies

The following sections describe each Protection Resource Management Zone in the Deadman Watershed Land Use Plan (LUP), and outline recommended allowable uses and activities as defined by the Ministry of Environment.

Currently there are six forestry service campgrounds within the Deadman Watershed, they include; Vidette, Bog, Deadman, Windy, Skookum and Snohoosh Lakes. Provincial parks within the watershed include Bonaparte, Porcupine Meadows, Tsintsunko Lake parks. The area also includes the Skookum Hoodoos Protected Area (Speed and Henderson 1998, Karakatsoulis et al. 2005)[1]

Currently the objectives for the six forestry service campgrounds, Bonaparte and Porcupine Meadows Parks and the Deadman Hoodoos are defined by the Ministry of Environment. The Skeetchestn Band would like to see more collaboration on the management of those areas and will define management objectives for the Deadman Valley, Deadman Falls, and the Centre of the Universe (KLRMP 1995).

The entire Deadman valley bottom as well as 1 Km. Buffers around Deadman Falls, Center of the Universe, Hoodoos, Heller tea beds , Heller Canyon game jump and Tobacco meadow have all been designated as no go zones within the Skeetchestn Heritage Conservation Law and as such will be protected from any industrial development at all.

[1] Note that all Provincial parks and forestry service campgrounds, whether designated by Skeetchestn or not, remain part of the Skeetchestn traditional territory and have not been surrendered through treaty or otherwise thus is subject to underlying Aboriginal Title.

P1. Bonaparte

This 11,700 hectare zone is provincially significant because of its high values for recreation and conservation. Bonaparte provides representation of Montane Spruce and Engelmann Spruce-Subalpine Fir forests and is an excellent example of the complex system of lakes, sedge meadows and riparian areas found in the Thompson Plateau.

This extensive natural area contains many wild rainbow trout lakes. Several recreation/tourism operations depend on the existing wilderness-type fishing and hiking opportunities provided in this area. Important habitat for several mammals and birds is also found within the zone, and Skoatl Point is a unique geological feature. The north-western part of Bonaparte overlaps Jamieson Creek community watershed. This Park also has existing grazing tenures which will be permitted by the Ministry of Forests and Range. [KLRMP 1995]

Bonaparte Protection RMZ

Management Categories	Management Strategies
• Natural Environment[1] • Wilderness[1] • Strict Preservation (orchid beds) [1]	• **Skeetchestn will confer with BC Parks to work towards restricting snowmobiles in the Deadman Watershed.** • The Shelly Lake area (Area B) will be managed for public recreation use[1]. • Where consistent with the access management plan, allowance will be made for limited mechanized access **(**snowmobiles) on primitive roads or trails. All such uses will be subject to conditions identified the management and development plan for the RMZ[1]. • Existing access into the RMZ will continue, for example - access by horse - aircraft access[1] • Access adjacent to the RMZ will be managed in accordance with the defined objectives and strategies of the RMZ[1]. • Motor boat use will be allowed on a site-specific basis[1]. • A wildlife corridor in the form of an ecosystem network will be established between the protection zone and Bonaparte Lake[1]. **(needs to be confirmed)**

[1] Taken from the 1995 Kamloops Land and Resource Management Plan. These management categories and strategies are for discussion purposes only.

P2. Porcupine Meadows

The 2,000 hectare Porcupine Meadows unit contains an extensive wetland complex within Englemann Spruce - Subalpine Fir forest. These wetlands are important to many wildlife species, including sandhill cranes.

The RMZ includes trails to the sub-alpine, and provides opportunities for hiking, wildlife viewing and nature appreciation. The area is popular with snowmobilers and hunters. There is a historic pack horse trail to Porcupine Ridge. [KLRMP 1995]

Porcupine Meadows Protection RMZ

Management Category	Management Strategies
• Natural Environment[1]	• **Skeetchestn will confer with BC Parks to work towards restricting snowmobiles in the Deadman Watershed.** • Currently snowmobiling, hunting and trapping (existing licenses) are allowed uses within the park[1].

[1] Taken from the 1995 Kamloops Land and Resource Management Plan. These management categories and strategies are for discussion purposes only.

P3. Deadman Valley

Deadman Valley RMZ

Management Category	Management Strategies
• Natural Environment[1] • Category #4 lands as defined in the Territorial Heritage Conservation Law.	• **Skeetchestn Indian Band is proposing that NO industrial activities take place within the Deadman Valley.** • Other objectives to be determined (ie tourism and recreation)

2.3.3 Special Feature Protection Resource Management Zones

Special Feature Protection RMZs are small areas protected for their rare, scarce or unique features. In these RMZs, management objectives are directed to protecting the special features identified.

The following sections describe Special Feature Protection Resource Management Zones in the Skeetchestn LUP.[1]

	Designator	Goal 2 Protected Area	Feature	Area (ha)	Management Category	Comments
P1	Province	Tsintsunko Lakes[2]	Lakes / Wetlands / Fishery[2]	350[2]	Intensive Recreation / Natural Environment[2]	An access management zone will be identified for the balance of Tsintsunko Lake not included in the PA and the lakes to the northeast[2]
P2	Skeetchestn	Deadman Falls	Waterfalls		Natural Environment/ Cultural[2]	Category #4 land: areas within the Band's territory which are of such heritage value that there shall not be any infringement of the heritage resources on such lands[3].
P3	Skeetchestn	Centre of the Universe			Natural Environment/ Cultural	Category #4 land: areas within the Band's territory which are of such heritage value that there shall not be any infringement of the heritage resources on such lands[3].
P4	Skeetchestn /Province	Deadman Hoodoos[2]	Geologic feature[2]		Natural Environment/ Cultural	Category #4 land: areas within the Band's territory which are of such heritage value that there shall not be any infringement of the heritage resources on such lands[3].
P5	Skeetchestn	Tobacco Meadow	Cultural /sustenance		Natural Environment/ Cultural	Category #4 land: areas within the Band's territory which are of such heritage value that there shall not be any infringement of the heritage resources on such lands[3].
P6	Skeetchestn	Heller Canyon/ Game Jump	Geologic feature/ Cultural		Natural Environment/ Cultural	Category #4 land: areas within the Band's territory which are of such heritage value that there shall not be any infringement of the heritage resources on such lands[3].

[1] All zones, whether designated by Skeetchestn or not remain part of the Skeetchestn traditional territory and have not been surrendered through treaty or otherwise thus is subject to underlying Aboriginal Title.

[2] Taken from the 1995 Kamloops Land and Resource Management Plan. These designations are for discussion purposes only.

[3] As defined in the Territorial Heritage Conservation Law

P7	Skeetchestn	Heller Tea Beds	Cultural/ sustenance		Cultural	Category #4 land: areas within the Band's territory which are of such heritage value that there shall not be any infringement of the heritage resources on such lands[1].
P8	Skeetchestn	Indian Potatoes at Smith Camp	Cultural/ sustenance		Cultural	Category #4 land: areas within the Band's territory which are of such heritage value that there shall not be any infringement of the heritage resources on such lands[1].

[1] As defined in the Territorial Heritage Conservation Law

2.4 Special Resource Management - Habitat / Wildlife Management Areas

A Special Resource Management Zone for Habitat and Wildlife Management Areas has been identified in the Deadman Watershed. Management in this zone will ensure the long-term viability of identified wildlife habitat, using defined management tools and activities. More areas may be added for burrowing owl, sharp-tailed grouse and/or other species as they are identified.

Objectives and strategies for Habitat Resource Management Zones are outlined below, followed by area specific objectives and strategies. General Management Zone objectives and strategies also apply as baseline management in these areas.

2.4.1 Resource Management Objectives and Strategies

The overall objective of special resource management zones for habitat and wildlife management areas is to:

- maintain and enhance identified wildlife habitat areas.

The following strategies may be required to proceed with a long-term planning exercise:

- inventory of opportunities and features;
- mapping of wildlife and biodiversity values;
- access management and,
- defined and mapped long-term operational areas for other resource uses.

2.4.2 Area-Specific Objectives and Strategies

H1. California Bighorn Sheep Lambing Area

California Bighorn Sheep are blue-listed in British Columbia. They cease to exist in many areas of the Okanagan due to habitat degradation, changes in predation mortality and historical overharvest. They are also experiencing limited access to forage plants as a result of the spread of non-native plants, fire suppression, intensive cattle grazing, timber harvesting and land development (Ministry of Environment 2013). Currently a herd has been re-established at Kamloops Lake and the lambing habitat falls on the southeastern edge of the Deadman Watershed. Lambing will generally take place on escape terrain (steep rock bluffs or expansive areas of steep, rugged terrain) next to the winter range grasslands (Ministry of Environment 2013).

Resource Management Objectives and Strategies

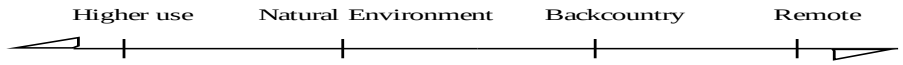
Objectives	Strategies	Indicators
• Limit access to lambing habitat[1]. • Maintain adjacent grazing areas[1]	• Map lambing habitat and adjacent grazing areas. • Others to be determined	To be determined

[1] Taken from the 1995 Kamloops Land and Resource Management Plan. These objectives, strategies and indicators are for discussion purposes only.

2.5 Special Resource Management - Recreation and Tourism

Special Resource Management - Recreation and Tourism Resource Management Zones are areas where there are significant opportunities for recreation and tourism management

Recreation and Tourism Resource Management Zones



Within Special Resource Management - Recreation and Tourism RMZs there are four categories of recreational activity: Higher Use, Natural Environment, Backcountry, and Remote. Of these, Higher Use is the most accessible and most frequently used and Remote is the least developed and used. Each of these categories has its own set of objectives and strategies, which are outlined below.

Recreation uses within the Deadman Watershed include: snowmobiling, camping, fishing, hunting, hiking and mountain biking (Speed and Henderson 1998, Karakatsoulis et al. 2005).

At this time Recreation and Tourism areas are not designated into specific zones. These designations will be delineated at a future date.

2.5.1 Resource Management Objectives and Strategies

Primary objectives for Recreation and Tourism Resource Management Zones are to:

Objectives	**Strategies**
• To be determined	• To be determined

3.0 Implementation

Capacity Building for Ecosystem-based Management

There is a common vision held by valley residents for community-based control over resource, utilization in the Deadman Watershed. The common goal is to support the local resource-based jobs and cultures. The following key steps are from current and previous community and watershed planning (1994, 1997, 1999 and 2001) to guide capacity building for those involved resource protection and sustainable use in the valley:

Comment [ma6]: I think that one of our tasks here has to be the updating of the various inventories etc. (present state of the timber resource, updated roads inventory, Skeetchestn identified wildlife habitat mapping, reality check on what has actually occurred regarding commitments and statements in previous planning exercises etc..

1. **Reinstate Deadman Watershed Committee:** Develop a plan to engage the Skeetchestn community and other watershed residents in watershed management and the implementation of the Deadman Watershed Land Use Plan.

2. **Continue efforts to develop a Resource Centre** including staff, equipment, and data centre. The centre should address cultural/sustainable use practices in the valley, language and traditional knowledge, as well as a specific reference species and habitats at risk, and project activities. Consider a habitat and management atlas to integrate data, management and ecological modelling tools as well as academic linkages to Simon Fraser University/SCES and Thompson Rivers University. ~~In conjunction with Weyerhaeuser, t~~The Band is presently working towards the long term goal of developing a local comprehensive natural resource data base and forestry field office to be set up within the watershed and staffed by Band and other community members.

3. **Develop policy and regulatory tools** to implement sustainable resource management plans in forestry, range, fisheries and cultural resources etc. These plans will embrace community/watershed values, utilize local knowledge and extend control and benefit sharing plans for the residents of the Deadman River Watershed. Consider role of band jurisdiction and model for incorporating TEK.

4. **Collaborate on eco-friendly and sustainable resource restoration and management strategies** with watershed residents that increase local knowledge, employment, value and benefits from natural resources. Focus on land use practices, water, forests, range and riparian areas. Address community recycling and value added products from resources available within the valley;

5. **Provide training and infrastructure development to facilitate local employment** in future resource management work as part of community involvement in stewardship;

6. **Build a business plan** to support process (communications and planning), training, and policy development from the perspectives of valley residents. [Moore 2001]

3.1 Roles and Responsibilities

Once the Deadman Watershed Land Use Plan is finalized and approved by Skeetchestn Chief and Council. Follow up processes will be defined.

3.1.1 LUP Follow-up Committee (short-term)

3.1.2 LUP Follow-up Committee (long-term)

3.2 Local Level Planning

Local level plans such as coordinated access plans or protected area management plans will be developed by the Skeetchestn Natural Resource Department with input from the Skeetchestn community, other valley residents and outside resource users.

3.3 Public Education

- Advance the public understanding of the Traditional Heritage Conservation Law and the values associated with cultural practices in the development of planning, resource protection and authorization.

- Establish a resource centre and a Territorial Patrol to

    - address cultural/sustainable use practices in the watershed~~valley~~, language and traditional knowledge

    - educate about species and habitats at risk

- Develop a communications plan including regular meetings and a newsletter to link valley residents to address educational needs around:

    - watershed planning;

    - sustainable economic development strategies for forest, grassland, water and fishery resources;

    - policy and planning efforts of outside resource agencies and companies, and

    - topical meeting dates and information sources.

- Develop a communications theme between valley residents, Ministry of Environment, DFO and the Band to address naturalization of flow regimes as required to maintain ecosystem values, flood control and water needs (Moore 2001).

3.4 Preliminary Inventory and Research Priorities

- Mapping of moose and deer winter ranges as defined by Skeetchestn Natural Resources Department and Skeetchestn hunters.
- Mapping of California Bighorn sheep lambing area as defined by Skeetchestn Natural Resources Department and Skeetchestn hunters.
- Conduct meetings with Chief and Council, Skeetchestn community and Skeetchestn Natural Resources Department to discuss and finalize full list of Land Use objectives, strategies and indicators.
- Working in coordination with Ministry of Forests, Lands and Natural Resource Operations, Skeetchestn Natural Resource Department will update mapping to reflect % of watershed that has been harvested to date. This should include timber harvesting methods used as well as silviculture updates.
- Continue efforts to document traditional language, innovations and practices associated with sustainable resource use practices and broader ecosystem values.
- Full inventory of naturally occurring grasslands in conjunction with BC Grassland Conservation Council.
- Continue inventory of culturally important plants and their cultural uses.
- Geoscience surveys to improve knowledge of resource endowment.
- Initiate research program on the efficacy of Elk re-introduction
- Develop a habitat and management atlas to integrate data, management and ecological modelling tools as well as academic linkages to Simon Fraser University/SCES and Thompson Rivers University.
- Continue research on logging systems and their impact on non-timber forest values and economic return.
- Develop in collaboration with DFO, best management practices for riparian zones that will begin to address sedimentation, water temperatures, wildlife habitat and movement corridor needs and traditional riparian vegetation.
- Identify and delineate *Recreation and Tourism Resource Management Zones*.

(Moore 2001, Community Meeting 2013)

4.0 Monitoring and Amendment

Once the draft land use plan is approved by Skeetchestn Chief and Council, the Skeetchestn Natural Resources Department will seek additional resources to complete phase II of the planning exercise specifically to address the list of Preliminary Inventory and Research Priorities and any other priorities that may arise. The natural resources dept. will also endeavour to provide annual reports that will communicate how the objectives and strategies in the Deadman Watershed Land Use Plan are being met.

As the Skeetchestn Indian Band secures resources to complete inventory work and research as defined in Plan, updates to the draft and finalized document may be recommended. Public and community meetings may also provide materials for Plan updates.

Glossary of Terms

Excerpt from the Kamloops Land and Resource Management Plan

Adaptive management - A process of refining management tools that includes setting management objectives specifically designed to answer management questions, where monitoring the effectiveness of the tool is an integral part of the process.

Agricultural Land Reserve (ALR) - A provincial land-use zoning initiative established in 1974 to protect the province's agricultural land base.

Anadromous fish - Fish species born in freshwater, spend much of their lives at sea, and return to freshwater to reproduce.

Animal unit month (AUM) - The amount of forage required to support one cow-calf pair, or equivalent, for one month.

Allowable annual cut (AAC) - The volume of timber approved by the chief forester to be harvested annually.

Appraisal fencing - Funding for fencing provided in situations where logging activities breach the natural barriers between grazing tenure holders. Previously funding was provided for appraisal fencing through the Interior Stumpage Appraisal System.

Aquifer - Naturally occurring groundwater source.

ATV - All-terrain vehicle.

Benchmark - Areas where cattle use would not be permitted in order to compare the impact of grazing on adjacent areas.

Biodiversity - The diversity of plants, animals, and other living organisms in all their forms and levels of organization, including genes, species, ecosystems, and the evolutionary and functional processes that link them.

Biogeoclimatic ecosystem classification system - A hierarchical classification system having three levels of integration--regional, local, and chronological--and combining climatic, vegetation, and site factors.

Biogeoclimatic zone - A geographic unit with a broadly homogenous macro climate.

Blue-listed species - Species deemed by the BC Ministry of Environment, Lands and Parks to be vulnerable or sensitive.

C.H.A. process (cultural heritage assessment process) - a Skeetchestn Band led field and community based process for evaluating cultural values existent upon any area of the Skeetchestn Traditional Territory

Community Watershed - Any watershed defined as such in the Forest Practices Code.

Community Watershed Guidelines - Provincial policy for regulating resource uses in community watersheds for the purpose of maintaining water quality, water quantity, and timing of flow.

CORE - BC Commission on Resources and Environment, instructed to develop for public and government consideration a British Columbia-wide strategy for land use and related resource and environmental management.

Critical wildlife habitat - Part or all of a specific place occupied by a wildlife species or a population of such species and recognized as being essential for the maintenance of the population.

C.R.M.Z.s (Cultural resource management zones) all lands within 100 meters of a water body (standing or flowing) or riparian area within Skeetchestn Traditional Territory

Co-ordinated Access Management Plan (CAMP) - A strategy, prepared through the co-ordinated involvement of government officials, resource users, recreationists, and other interested publics, designed to manage access of all users into a specified area.

Ecosection - An ecological unit based on climate and physiography.

Ecosystem - A functional unit consisting of all the living organisms (plants, animals, and microbes) in a given area, and all the non-living physical and chemical factors of their environment, linked together through nutrient cycling and energy flow. An ecosystem can be of any size--a log, pond, field, forest, or the earth's biosphere--but it always functions as a whole unit. Ecosystems are commonly described according to the major type of vegetation, for example, forest ecosystem, old-growth ecosystem, or range ecosystem.

Ecosystem network - A planned landscape zone that serves to maintain or restore the natural connectivity within a landscape unit. A Forest Ecosystem Network consists of a variety of fully protected areas, sensitive areas, classified areas and old-growth management areas.

Esker - Hilly, typically sinuous formation of sediments deposited by meltwater contained in channels flowing beneath a glacier.

Floodplain - A level, low-lying area adjacent to streams that is periodically flooded by stream water. It includes lands at the same elevation as areas with moving water, such as active or inactive flood channels, recent fluvial soils, sediment on the ground surface or in tree bark, rafted debris, and tree scarring.

Forest Development Plan - An operational plan guided by the principles of integrated resource management (the consideration of timber and non-timber resource values), which details the logistics of timber harvesting usually over a period of five years. Methods, schedules, and responsibilities for accessing, harvesting, renewing, and protecting forest resources are set out to enable site-specific operations to proceed.

Forest Practices Code (FPC) - the *Forest Practices Code of British Columbia Act* (1995), Regulations, and Guidebooks that govern forest practices in British Columbia.

Forest Renewal Plan - A recently developed provincial strategy to: renew the land and keep the forests healthy; invest in the forest lands which generate much of BC's wealth; ensure sustainable use and enjoyment of the forests; ensure the continued availability of good forest jobs; and ensure the long-term stability of communities that rely on the forests.

Forest Renewal BC (FRBC) - Provincial government agency to be established under legislation to manage and direct forest renewal investments under the Forest Renewal Plan.

GDP - Gross domestic product.

Geographic Information Systems (GIS) - Computer-generated techniques for storing, managing, presenting, and interpreting a wide variety of data on a spatial medium.

Green-up - The process of re-establishing vegetation following logging to achieve specific management objectives (for example, rate of harvest control, visual cover for wildlife, visual quality, or hydrological recovery). The most common standards of green-up are:

- **green-up** - the minimum height and stocking levels which trees (as described in either a Silviculture Prescription or regional stocking standards) on a cutblock must achieve before an adjacent stand of timber may be harvested;
- **visually effective green-up** - the stage at which regeneration on a cutblock is perceived by the public as being newly established forest. The forest cover on the cutblock must generally be of sufficient height to block stumps, logging debris, and bare ground from view. Once achieved, an adjacent stand of timber is available for harvest.
- **hydrological green-up** - the point at which a second-growth stand of timber will hydrologically resemble old-growth in terms of timing and quantity of water yield.

Indicators of ecosystem health - Ecosystem components, processes, and functions used by managers to assess its viability.

Integrated Resource Management (IRM) - The identification and consideration of all resource values--including social, economic, and environmental needs--in land-use decision making. It focuses on resource and land management, and is based on a good knowledge of ecological systems, the capability of land, and the mixture of possible benefits.

Integrated Watershed Management Plan (IWMP) - Plans prepared for a community watershed to guide the management of land and resources.

Interagency Management Committee (IAMC) - Administrative body struck at the regional level to determine LUP boundaries, project priorities, and funding. Boundaries and priorities may be guided by regional plans. These committees appoint an interagency planning team, approve the terms of reference for the plan, review and make recommendations on all planning products, and play a role in dispute resolution. The role of the interagency management committees is in addition to their original function of co-ordinating the Protected Areas Strategy.

Interagency Planning Team (IPT) - Administrative body composed of potentially locally-based provincial and federal resource managers, local government staff, and aboriginal representatives, struck to initiate each Land and Resource Management Plan, to provide technical support throughout the process, to establish working groups when necessary, and to determine the degree of public participation in the planning process.

Interbasin release - The human-induced transfer of all or part of the streamflow from one drainage basin into another, in order to increase streamflow in the latter drainage basin.

Land and Resource Management Plan (LUP) - A strategic, multi-agency, integrated resource plan at the subregional level. It is based on the principles of enhanced public involvement, consideration of all resource values, consensus-based decision making, and resource sustainability.

Landscape level planning - Planning undertaken for the co-ordination and integration of resource conservation and development activities, and to provide for the maintenance of biodiversity, in landscape units.

Landscape units - Delineated on the basis of physiographic and/or ecological features, such as watersheds. Generally between 5,000 and 100, 000 hectares in size. They serve as a focal point for the co-ordinated management of a broad range of resource values, and are central to the management of landscape-level biodiversity. Design of ecosystem networks, visual resource management, and access management are examples of common activities of landscape-level planning. Landscape units are formally identified in the Forest Practices Code as a higher level plan. For the Kamloops LUP, objectives for landscape units will be consistent with the management direction provided by a resource management zone.

Late winter habitat (for caribou) - Caribou habitat that is used for foraging and travel during mid and late winter, when the snow pack allows caribou to feed on arboreal lichens.

Local Resource Use Plan (LRUP) - A strategic direction for a portion of a timber supply area or tree farm license that provides management guidelines for integrating resource use in the area.

Long Range Sustainable Yield (LRSY) - A measure of the long-run timber productivity, considering harvesting and regrowth, in a specified area.

LUP Planning Team - Consists of representatives from provincial and federal government agencies and from stakeholder groups--representatives of the community, industry, labour, tenure holders, recreational users, and environmentalists--and is the group responsible for developing the LUP.

Multiple Account Analysis (MAA) - A technique used to measure and assess all of the costs and trade-offs--economic, environmental, and social--involved in a number of scenarios considered in a planning and decision-making exercise.

Official Community Plan (OCP) - General statement of the broad objectives and policies of the local government respecting the form and character of existing and proposed land use and servicing requirements in the area covered by the plan.

Official Settlement Plan (OSP) - Until recently, the only type of plan, similar to OCPs, that regional governments (such as the Thompson-Nicola Regional District) could prepare. However, regional districts, including TNRD, now undertake official community planning as defined above.

Pre-Harvest Silvicultural Prescription (PHSP) - A site-specific plan describing the nature and extent of any timber harvesting and silviculture activities that are designed to achieve the required management objectives, including a free-growing stand to specified standards.

Person year (PY) - Unit equivalent to one person employed for one year.

Protected areas (PAs) - Areas such as provincial parks, federal parks, wilderness areas, ecological reserves, and recreation areas that have protected designations according to federal and provincial statutes. Protected areas are land and freshwater or marine areas set aside to protect the province's diverse natural and cultural heritage.

Rangelands - A broad category of land characterized by native plant communities that are often associated with grazing. Rangelands are managed by ecological rather than agronomic methods.

Range Use Plans - An operational plan that describes the range and livestock management measures that will be implemented to ensure that range resources are protected and that the management objectives for other identified resource values are achieved.

Range condition - The present plant community and soil conditions relative to the potential natural "climax" plant community a particular area is capable of. "Climax" is the highest ecological successional stage of a natural plant community capable of perpetuation under prevailing climatic and soil conditions. "Excellent" range condition is a "climax" plant community and "poor" range condition consists of over 60% weedy non-native plant species.

Recreation user day (RUD) - Unit to measure the intensity of recreation use in a specified area--each RUD represents one day spent by one person in the specified area.

Red-listed species - Candidate species for legal designation by the BC Ministry of Environment, Lands and Parks as endangered or threatened.

Referral - The process by which applications for permits, licenses, leases, etc., made to one government agency by an individual or industry are given to another agency for review and comment.

Resource management zones (RMZs) - Provide a tool for implementing government's social, economic, and environmental objectives for land and resource use within the province. RMZs identify provincially, regionally or sub-regionally significant resource values and provide overall direction for their management. The management direction must be compatible with the enhancement of the resource identified in the zone (e.g. Special Resource Management to protect caribou habitat). Resource management zones are identified as a higher level plan in the BC *Forest Practices Act*.

Resource unit - Land areas for which resource management strategies have been prepared that address specific issues. *However, resource units are no longer used by the Kamloops Land and Resource Management Planning initiative*.

Riparian area - The land adjacent to the normal high water line in a stream, river, or lake, extending to the portion of land that is influenced by the presence of the adjacent ponded or channelled water. Riparian areas typically exemplify a rich and diverse vegetative mosaic reflecting the influence of available surface water.

Sensitive Areas - Sensitive areas are established to protect regionally significant or unique resource features from an environmental or social perspective at a local scale. They can be identified as part of a landscape planning process or may be established independently. Where sensitive areas occur within a resource management zone, objectives for the area must be consistent with the resource management zone objectives. Sensitive areas are formally established under the BC *Forest Practices Act* as a higher level plan. Sensitive areas designation will be used to conserve special resource values that may be degraded unless resource development proceeds with special care. They will be used to conserve site-specific features such as particular viewscapes or critical wildlife habitat.

Seral stages - The various communities that together make up a sere--the characteristic sequence of biotic communities that successively occupy and replace each other in a particular environment over time following disturbance of the original community or the formation of a new, previously uncolonized environment.

Stand - A community of trees sufficiently uniform in species composition, structure, age, arrangement, and condition and growing on a site of sufficiently uniform quality to be a distinguishable unit.

Stumpage (assessment) - The price paid to the provincial government for timber harvested on Crown land.

Thermal cover - Cover used by animals to lessen the effects of weather.

Timber supply area - An area defined by an established pattern of wood flow from management units to the primary timbering industries.

Total Resource Plan (TRP) - A process that designs long-term forest development and guides timber harvesting over an entire area, such as a watershed, and confirms how approved objectives for identified resource values will be achieved on the ground.

Transitional habitat (for caribou) - Caribou habitat that is used in early winter, or early spring either for foraging, calving, or travel. Transitional habitat is generally located at lower elevations, often in the Interior Cedar Hemlock zone.

Uneven-aged silvicultural system - A silvicultural system designed to create or maintain and generate an uneven-aged stand structure. Single-tree and group selection are uneven-aged silvicultural systems.

Viable populations - A self-sustaining population with a high probability of survival despite the foreseeable effects of demographic, environmental, and genetic stochasticity, and of natural catastrophes.

Viewshed - A physiographic area composed of land, water, biotic, and cultural elements which may be viewed and mapped from one or more viewpoints and which has inherent scenic qualities and/or aesthetic values as determined by those who view it.

Visual absorption capability (VAC) - The relative capacity of a landscape to absorb land-use alterations and maintain its visual integrity.

Visual quality objective (VQO) - A resource management objective that reflects the desired level of visual quality based on the physical characteristics and social concern for an area. The term refers to the degree of acceptable human alteration to the characteristic landscape.

Visually Sensitive Areas - Viewsheds that are visible from communities, public use areas, and travel corridors--including roadways and waterways--and any other viewpoint so identified through referral or planning processes.

Watershed - The natural upstream land drainage area above any point of reference on a stream.

Watershed assessment - Evaluates the present state of watersheds and the cumulative impact of proposed development on peak flows, suspended sediment, bedload, and stream channel stability.

Wildlife trees - Dead, decaying, deteriorating, or other designated trees that provide present or future habitat for the maintenance or enhancement of wildlife.

Woodlot license - Similar to a tree farm license but on a smaller scale, it allows for small-scale forestry to be practised in a described area (Crown and private land) on a sustained or perpetual yield basis.

Appendix 1: Territorial Heritage Conservation Law

SKEETCHESTN INDIAN BAND

TERRITORIAL HERITAGE CONSERVATION LAW

1998

WHEREAS on December 11, 1997, the Supreme Court of Canada rendered its decision in *Delgamuukw v The Queen ("Delgamuukw"),* clarifying the law with respect to aboriginal rights and title, as well as clarifying the rights and obligations of the Crown in Right of Canada, and of the Province of British Columbia, to aboriginal nations;

AND WHEREAS the Supreme Court of Canada in *Delgamuukw* has made it clear that no government may lawfully infringe on aboriginal rights and title (or give consent to third parties to do so) without first consulting with the aboriginal nation who will be affected;

AND WHEREAS of the Skeetchestn Indian Band is the entity descended from the people known as Secwepemc, part of the Secwepemc Aboriginal Nation, who occupied their territory at 1846, the time of the assertion of sovereignty by the British Crown;

AND WHEREAS Chief and Council of the Band are the elected representatives of the Skeetchestn people, responsible for protecting aboriginal rights and title;

AND WHEREAS the heritage of the Band is part and parcel of its aboriginal rights and title;

AND WHEREAS the Band considers it advisable to set out the Band's laws and requirements, within the Skeetchestn Band's territory, concerning heritage matters, and set out what governments and third parties are required to do in consulting with the Band concerning that heritage;

AND WHEREAS the Skeetchestn Band and the Kamloops Band are closely related, being referred to in the ethnographic record as the Kamloops Division of the Secwepemc Nation;

AND WHEREAS parts of the Band's territory are, by Secwepemc law, custom and usage, under the control and jurisdiction of the Band, other parts are under joint jurisdiction with other Secwepemc Bands, and still other parts are held for the use and benefit of all Secwepemc people under common jurisdiction;

AND WHEREAS this law has been developed in coordination with other Secwepemc Bands, and in particular the Skeetchestn Band;

AND WHEREAS this law has been approved by majority vote at a duly convened meeting of the Skeetchestn Indian Band held on the 28th day of September, 1998;

NOW THEREFORE BE IT RESOLVED that the Council of the Skeetchestn Indian Band, at a duly convened meeting, enacts the following law:

1. **SHORT TITLE**

This law may be cited as the "Territorial Heritage Conservation Law".

2. INTERPRETATION

"academic (non-development) proponent" means any person, firm, corporation or government, including Canada or B.C., which seeks to conduct a heritage investigation within the Band's territory, for the purposes of academic, research or scholastic purposes.

"alter" or **"alteration"** means to change in any manner and, without limiting this, includes:

(a) the making of an improvement, as defined in the *Builders Lien Act*, R.S.B.C.; and

(b) any action that detracts from the heritage value of a heritage area or a heritage object.

"Band" means the Skeetchestn Indian Band.

"Band's territory" means those parts of the Secwepemc traditional territory which are, by Secwepemc law, custom and usage, under the exclusive or joint jurisdiction of the Band.

"Band Member" means a person who is a member of the Band and registered on the Band list as defined in the *Indian Act.*

"Category #1 land" means areas within the Band's territory which are of such heritage value that they are in need of protection under this law.

"Category #2 land" means areas which no longer come under the provisions of this law because an agreement has been reached pursuant to section 7 of this law.

"Category #3 land" means areas for which the level of protection required is uncertain.

"Category #4 land" means areas within the Band's territory which are of such heritage value that there shall not be any infringement of the heritage resources on such lands.

"Chief and Council" or **"Band Council"** means the Chief and Council elected according to the custom of the Band.

"conservation" includes any activity undertaken to protect, preserve or enhance the Band's heritage.

"Crown in Right of Canada" or **"Canada"** means the Government of Canada.

"Crown in Right of British Columbia" or **"B.C."** means the Government of B.C.

"designate" means to designate under section 5 of this law.

"develop" or **"development"** means any use of land which involves a change, an expansion or an alteration of an existing use, and, without restricting the generality of the foregoing, includes the extraction of or exploitation of resources from the land.

"development proponent" means any person, firm, corporation or government, including Canada or B.C., which seeks to use or develop land within the Band's territory, or which seeks to give others the permission to use or develop land within the Band's territory.

"heritage" means having aesthetic, cultural, educational, historical, or spiritual significance to the Band, or having any such characteristics in combination with an economic use.

"heritage areas" means land, including land covered by water, that has heritage value to the Secwepemc, and, without restricting the generality of the foregoing, includes traditional use areas, areas of historical significance, sacred and spiritual places, archaeological sites, and structural or landscape features of heritage significance.

"heritage investigation" means an archaeological or other systematic study of an area for the purpose of revealing its history and establishing whether there is a need for protection and conservation; this may include the recording, removal and analysis of artifacts, features and other material necessary for the purpose of the heritage investigation.

"heritage object" means any object or artifact having heritage significance.

"joint jurisdiction" means a jurisdiction over those parts of the territory which, by Secwepemc law, custom and usage, are under the jurisdiction of the Band and one or more other Secwepemc Bands.

"promulgate" means to declare.

"proponent" includes a development proponent and an academic (non-development) proponent.

"reserve" means the reserve lands of the Band as defined by the *Indian Act.*

"right of first refusal" means the right to be offered the heritage investigation contract in priority of any other person, firm or corporation.

"Secwepemc" means the Secwepemc people, or the Shuswap Aboriginal Nation.

"Skeetchestn Band's territory" or **"the Band's territory"** means the area within Secwepemc territory which, by Secwepemc law, custom and usage, is under the control and

jurisdiction of the Skeetchestn Band, whether jointly with the Skeetchestn Band or separately.

"traditional territory" means the territory of the Secwepemc Aboriginal Nation, as outlined on the map attached as Schedule "A" to this law.

3. OBJECT OF THE TERRITORIAL HERITAGE LAW

(1) The object of this law is to:

(a) encourage and facilitate the protection and conservation of the Band's heritage;

(b) prevent the unlawful infringement of the Band's heritage which is part of its aboriginal rights and title;

(c) promulgate the Band's laws and give notice of the laws to any proponent dealing with the Band's heritage within the Band's territory; and

(d) set out the Band's procedures which proponents are required to follow in consulting with the Band concerning land developments and resource management projects within the Band's territory, including those proposed for rivers and waterways, that may impact the Band's heritage.

(2) Unless the context otherwise requires, this law shall apply to the Band's territory, except in respect of the Band's reserves.

(3) For greater certainty, no provision of this law or anything done pursuant to this law, and no provision in an agreement entered into under section 7 of this law, shall be construed as abrogating or derogating from the aboriginal and treaty rights of the Secwepemc.

4. CULTURAL RESOURCES MANAGEMENT DEPARTMENT

(1) Subject to section 10(1) and (3), the Cultural Resources Management Department (the "CRMD"), shall, in conjunction with Chief and Council, be responsible for the administration and enforcement of this law.

(2) The CRMD may do the following:

(a) issue permits for the investigation of an area to determine the need for heritage conservation and protection;

(b) issue permits for the use of areas having heritage significance;

(c) conduct and arrange exhibits to inform the public concerning the Band's heritage; and

(d) represent the Band in matters regarding the use, management, conservation and protection of heritage.

5. HERITAGE DESIGNATION

(1) Unless covered by an agreement made in accordance with section 7 of this law, all land within the Band's territory are designated as Category #3 lands (areas for which the level of protection required is uncertain).

(2) (a) Chief and Council may, on the recommendation of the CRMD, designate any areas within the Band's territory as Category #4 land.

(b) As there can be no development of areas within Category #4 land (ie. fully protected), no permit shall be issued for these areas, and the consent of the Band to infringe on the heritage of such lands shall not be given.

(3) It shall be sufficient if lands within the heritage designation are described on a map or in a written description setting out the geographical boundaries of the land. Any uncertainty as to what lands are encompassed within the designation shall be resolved by Chief and Council.

(4) As soon as practicable, the Band shall serve notice of the designation made pursuant to subsection 5(1) on all persons who may be affected by the designation.

(5) The notice pursuant to this subsection 5(3) is validly given if placed in a local newspaper on two consecutive weekends.

6. HERITAGE PROTECTION

(1) Subject to subsection 6(3), except as authorized by this law, no person shall do any of the following within the Band's territory:

(a) commence alteration of any area within Category #3 land without a permit under section 8 of this law;

(b) alter any area within Category #4 land;

(c) damage, desecrate or alter any of the Band's heritage areas or remove material that constitutes part of that heritage;

(d) damage, desecrate or alter a burial place or remove human remains or any object from a burial place;

(e) damage, alter, cover or move an aboriginal rock painting or aboriginal rock carving; or

(f) damage, excavate, dig in or alter a site, or remove any object from a site that contains artifacts, features, materials or other physical evidence of archaeological value with respect to the Skeetchestn people's habitation or use.

(2) Without restricting the generality of subsection 6(1), this section applies to:

(a) any activity which may have the prohibited result set out in subsection 7(1); and

(b) any authorization by Canada or B.C. which may have the prohibited result set out in subsection 7(1).

(3) This section does not apply to Band members exercising traditional use activities, in accordance with Secwepemc customs and traditions, within the territory of the Band or the Secwepemc Nation.

(4) No consent of the Band to infringe on heritage within the Band's territory shall be given, or inferred, unless there has been compliance with this law.

7. HERITAGE AGREEMENT

(1) (a) In order to further the purposes and objectives of this law, the Band may enter into an agreement with a proponent (which includes B.C. or Canada) with respect to the conservation and protection of land within Categories #1, #3 or #4, or for the protection of heritage objects within the Band's territory, or with respect to any matter coming with this law.

(b) Chief and Council shall advise membership of the Band, at a duly convened meeting, of any proposal to enter into an agreement pursuant to subsection 7(1)(a).

(c) An agreement under subsection 7(1)(a) must be in writing, must be approved by Chief and Council and must not be inconsistent with this law.

(2) The heritage agreement may contain provision for compensating a land owner who acquired land within the Band's territory, prior to 1982, as a bona fide purchaser for value without notice of the Band's title to the land.

(3) No agreement concerning any matter coming within the purview of this law is valid unless it complies with this section.

8. CULTURAL RESOURCE MANAGEMENT PROCESS

(1) (a) Any proponent who has applied for a permit under the *Heritage Conservation Act*, R.S.B.C., 1996, c 187, shall provide to the CRMD a copy of any and all documentation concerning such permit.

(b) Notwithstanding that a proponent has applied for a permit under the *Heritage Conservation Act*, R.S.B.C., 1996, c 187, the proponent shall also comply with this law.

(2) HERITAGE INVESTIGATION PERMIT APPLICATION: DEVELOPMENT PROPONENTS

(a) Prior to commencing any development within Category #1 or Category #3 land in the Band's territory, a development proponent shall make an application to the CRMD for a heritage investigation permit, in the form set out in Schedule 1.

(b) Except as may be provided for in an agreement made pursuant to section 7 of this law, no application need be made for Category #2 land; however, a proponent shall give the undertaking set out in section 9.

(c) No development shall take place within or on Category #4 land.

(d) (i) Upon receipt of an application for a heritage investigation permit, the CRMD shall review the application with the proponent. The CRMD shall endeavour to arrive at a research methodology plan to be agreed upon with the proponent.

(ii) The CRMD may refuse to issue a permit to a proponent if:

A. The proponent fails to comply with this law;

B. The proponent's application fails to meet acceptable standards of best practice;

C. The proponent's application fails to provide for the full participation of the Secwepemc in the investigation process; or

D. The proponent's application fails to provide full disclosure of the proponent's development plans.

(iii) An appeal lies to Chief and Council from the refusal of the CRMD to issue a heritage investigation permit.

(3) HERITAGE INVESTIGATION PERMIT APPLICATION: ACADEMIC (NON-DEVELOPMENT) PROPONENT

(a) An academic (non-development) proponent wanting to conduct archeological work within the Band's territory for purposes other than development shall apply to the CRMD for a permit in the form set out in Schedule 1.

(b) The CRMD may require, as a condition of the permit, that the applicant conduct archeological work in an area chosen by the CRMD. This may be in addition to, or in substitution of, the area requested in subsection 8(3)(a).

(4) PART I INVESTIGATION: FIELD SURVEY AND RESEARCH

(a) Pursuant to a permit issued under this part, all proponents shall conduct a comprehensive field survey and field investigation, and shall otherwise comply with the terms and conditions of the permit.

(b) (i) The CRMD shall have the right of first refusal to conduct the heritage investigation, either directly by the CRMD or jointly with the proponent; and

(ii) Unless otherwise agreed by CRMD, the proponent shall pay for all the costs to do the work performed, or required to be performed, under this part, including the costs associated with the CRMD performing the work.

(c) Permits issued by the CRMD shall be in the form set out in Schedule 2, and shall contain a clause stipulating that all material found or generated as a result of heritage investigations shall be the property of the Band, or the joint property of the Band and another Band, as the case may be.

(d) The CRMD may charge an administration fee of 10% of the heritage budget for the project in respect of each permit issued under this law.

(e) The CRMD may sub-contract with the Shuswap Nation Tribal Council, or any other party, for any heritage investigation work to be done pursuant to this section.

(5) PART II REPORT: IMPACT ASSESSMENT AND SITE EVALUATION: PROPONENT

(a) Unless otherwise agreed to by the CRMD, on the basis of the field survey work of Part I, a development proponent shall prepare an impact assessment and site evaluation report.

(b) The assessment and evaluation report shall be submitted to the CRMD. The report shall:

i) Provide all information obtained from an area in order to document its land use history, including the area's resources, means of utilization, history, relationship to individuals and/or families and any other pertinent documentary evidence of past and current use;

ii) Include an analysis of all inventory and research-based information in relationship to the proposed development project which shall include an evaluation of the heritage significance of the area;

iii) State the actual and potential impact on heritage resources of the proposed development;

iv) Provide options for avoiding adverse impacts, if these exist;

v) If the adverse impacts cannot be avoided, detail alternative proposals for otherwise preserving the heritage value of an area, including, but not limited to, developing special heritage areas; and

vi) Provide options for funding the protection of the area or avoiding the adverse impacts.

(c) The CRMD may obtain a second opinion on the conclusions reached in the proponent's report as a result of the Part II work, and generally may take whatever steps may be necessary to ensure that proper information is obtained. Unless otherwise agreed to by the CRMD, the costs of the second opinion shall be paid for by the development proponent.

(d) The CRMD and the development proponent shall endeavour to prepare joint recommendations to Chief and Council concerning mitigation measures, including a recommendation as to whether the CRMD or the proponent should perform the mitigation measures. If such joint recommendations are not developed, then the recommendations of the CRMD shall be taken to Chief and Council, along with the comments of the development proponent. Chief and Council shall direct what mitigation measures the development proponent is required to take as a condition of proceeding with the development.

(e) If further investigation is required as a result of the decision of Chief and Council pursuant to Section 8(5)(d) hereof, then the development proponent shall comply with Section 8(4) of Part I.

(6) PART II REPORT: SITE EVALUATION: ACADEMIC (NON-DEVELOPMENT) PROPONENT

(a) Unless otherwise agreed to by the CRMD, on the basis of the field survey work of Part I, the holder of a permit, who is an academic (non-development) proponent, shall prepare a site evaluation report.

(b) The assessment and evaluation report shall be submitted to the CRMD. The report shall:

(i) Provide all information obtained from an area in order to document its land use history, including the area's resources, means of utilization, history, relationship to individuals and/or families and any other pertinent documentary evidence of past and current use; and

(ii) Include an analysis of all inventory and research-based information including an evaluation of the heritage significance of the area;

(7) PART III - IMPACT MITIGATION PERMIT

(a) If required by Chief and Council pursuant to Section 8(5), the proponent shall complete an application for a Part III Impact Mitigation Permit in the form attached as Schedule 1.

(b) If approved by Chief and Council, the CRMD shall issue to a proponent a Part III Impact Mitigation Permit, which shall contain the terms and conditions approved by Chief and Council under subsection 8(5)(d).

(c) For greater certainty, sections 8(5)(b), (c),(d) and (e) of Part I apply equally to the completion of the work required under this Part III.

(d) When the impact mitigation measures have been completed, a final report shall be provided to the CRMD. The final report may include recommendations for follow up. The CRMD will provide to Chief and Council a copy of every final report.

(8) COMPLETION OF INVESTIGATION

(a) Upon the completion of the heritage investigation work required under this section and upon the CRMD being satisfied that the Band's heritage is protected consistent with the object and purposes of this law, the CRMD shall provide Band Council with a written statement advising that conservation and protection of the Band's heritage in relation to the proponent's development has been or will be met by the proponent.

(b) Upon approval by Chief and Council, the CRMD shall provide the proponent with a certificate in the form of Schedule 3.

(c) The certificate shall include any terms and conditions required by Chief and Council pursuant to section 8(5)(d).

(9) CERTIFICATE OF CERTAINTY

(a) Following the issuance of a certificate pursuant to subsection (8)(b), and upon application by a proponent, Chief and Council may issue a Certificate of Certainty which sets out the following:

(i) that the requirements of consultation with the Band, within the meaning of the *Delgamuukw* case, have been met by the proponent concerning the Band's heritage resources;

(ii) provided that the proponent complies with the terms and conditions of the certificate, that the Band shall save the proponent harmless from any and all actions or causes of actions concerning the requirements of consultation, within the meaning of the *Delgamuukw* case, concerning the Band's heritage resources;

(b) The Certificate of Certainty shall be sufficient proof that the consultation requirements of *Delgamuukw* have been met.

9. PROPONENT'S UNDERTAKINGS

(1) Every proponent seeking to develop lands within the Band's territory shall provide a written undertaking to the CRMD that, in the event that any heritage resources are discovered on the land at any time during the course of the development, the CRMD shall immediately be advised as to the nature of the discovery. The proponent shall cease work until the CRMD can take the necessary action.

(2) Forthwith upon being advised of the discovery, the CRMD shall use its best efforts to immediately investigate and determine what, if any, steps the proponent must take in order to deal with the discovery.

(3) If the proponent is uncertain as to whether or not any discovery comes within this provision, it shall immediately seek the advice of the CRMD.

10. JOINT JURISDICTION

(1) (a) Where lands within the Band's territory are located within the area under the joint jurisdiction of the Skeetchestn and Kamloops Indian Bands (formerly the Kamloops Division), as set out on the map attached as Schedule "B", all the powers and duties under this law shall be exercised jointly by the Skeetchestn Indian Band and the Kamloops Indian Band.

(b) (i) By letter of agreement, Chief and Council of the Kamloops Indian Band may delegate to the Skeetchestn Band the powers to make decisions concerning the territory over which the two Bands have joint jurisdiction.

(ii) The Chief and Council of the Skeetchestn Indian Band may receive from the Kamloops Indian Band the powers to make decisions concerning the territory over which the two Bands have joint jurisdiction.

(iii) A copy of the letter of agreement shall be provided to proponents.

(2) For greater certainty, and subject to subsection (1)(b), where subsection (1)(a) applies:

(a) when anything is required to be done under this law, the Band shall use its best efforts, as may be appropriate, to ensure that it is also done under the Kamloops Territorial Heritage Conservation Law;

(b) nothing shall be permitted under this law which is prohibited under the Kamloops Territorial Heritage Conservation Law;

(c) where reference is made to the Skeetchestn Band Council or the CRMD doing anything under this law, permission shall also be sought from the Kamloops Band Council under its Territorial Heritage Conservation Law;

(d) where reference is made to the CRMD under this law, the permission shall also be sought from the person with similar authority under the Skeetchestn Territorial Heritage Law;

(e) (i) unless otherwise agreed to in writing by the Bands, Skeetchestn and Kamloops Bands shall issue joint permits under this law;

(ii) if the Bands have an agreement that only one Band shall issue a permit for any area, it shall provide a copy of that agreement to all proponents.

(3) In conjunction with the Skeetchestn Indian Band Council, where anything is required to be done under this law by the CRMD, the Skeetchestn Band Council may, by Band Council Resolution, delegate those functions to the Shuswap Nation Tribal Council.

(4) (a) The Bands shall provide a copy of this law to other Secwepemc Bands.

(b) In the event that other Secwepemc Bands have not passed a Territorial Heritage Conservation Law, the Skeetchestn Indian Band will keep such Band apprised of developments within the territory under common jurisdiction.

11. LAND SUBJECT TO AGREEMENT: CATEGORY #2 LAND

(1) The Band Council may, by Band Council Resolution, exempt land within its territory from coming within the ambit of this law. Such lands shall then be considered as Category #2 lands.

(2) No land shall be released pursuant to this section unless:

(a) a heritage agreement has been reached pursuant to section 7 of this law; or

(b) an agreement has been reached with the proponent (including B.C. and Canada, as may be necessary) which specifies how the Band's aboriginal title will be protected within the exempted land.

12. CULTURAL RESOURCES MANAGEMENT REGISTER

1) The CRMD shall establish and maintain one or more registers, to be known collectively as the Cultural Resources Management Register, for the recording of the following:

(a) the designation of lands in accordance with section 5 of this law;

(b) heritage objects acquired under this law; and

(c) permits issued pursuant to this law.

(2) The Cultural Resources Management Register shall be available for inspection by any person during regular business hours.

13. BREACH OF LAW

(1) The CRMD shall forthwith advise Chief and Council of any breach or apprehended breach of this law.

(2) Chief and Council may take whatever steps are necessary to stop the breach or apprehended breach of this law, including, without restricting:

(i) the issuance to a person or class of persons a stop work order that prohibits any alteration of the area for a period of up to 120 days, subject to any requirements the CRMD considers appropriate; and

(ii) preventing further access to the area of territory where the breach has or may be occurring.

(2) Any person who contravenes this law is liable to prosecution.

14. APPLICATION OF LAW

(1) If there is a conflict between the provisions of this law and any other law of the Band, this law shall apply to any matter affecting the protection and conservation of the Band's heritage.

(2) This law applies to all land developments and resource management projects within the Band's territory, including those proposed for rivers and waterways, that may impact the Band's heritage.

(3) For greater certainty, compliance by a proponent with any law of B.C. or of Canada is not compliance with this law.

15. GENERAL PROVISIONS

(1) No person shall interfere with heritage investigations undertaken in accordance with the provisions of a permit issued under this law.

(2) The CRMD may amend, suspend or cancel a permit at any time:

(a) with the concurrence of the holder of the permit; or

(b) without the concurrence of the holder of the permit where the holder provided false or misleading information in the permit application or the holder has breached a condition of the permit or the holder has contravened a provision of this law.

(3) This law shall be construed as being remedial, and shall be given such fair, large and liberal construction and interpretation as best ensures the attainment of its purposes.

(4) Where a provision of this law is expressed in the present tense, the provision applies to the circumstances as they arise.

(5) Headnotes, marginal notes and headings form no part of the enactment, but shall be construed as being inserted for convenience of reference only.

(6) A finding by a court that a provision of this law is void or invalid shall not affect the validity or invalidity of the rest of the law.

16. NOTICE AND COMING INTO FORCE

(1) This law shall come into force upon approval of Chief and Council.

(2) Express notice of this law shall be given to Canada and B.C.

(3) This law shall be published in the First Nation Gazette.

(4) Canada shall be invited to register this law under s.81 of the *Indian Act.*

APPROVED BY CHIEF AND COUNCIL THIS 28th day of September, 1998.

_____

Chief Ronald Ignace

_____ _____

Councillor Marlene Peters Councillor Thomas Hewitt

_____ _____

Councillor Terry Deneault Councillor Edward Jules

Schedule 1

(See Section 8(2) of Territorial Heritage Conservation Law)

SKEETCHESTN INDIAN BAND

HERITAGE INVESTIGATION PERMIT or

IMPACT MITIGATION PERMIT

APPLICATION FORM

To: Skeetchestn Indian Band

Cultural Resources Management Department (CRMD)

From: (Name and address of Proponent)

Note to Proponent:

You should have received a copy of the Band's Territorial Heritage Conservation Law and reviewed it to ensure compliance with the law. A copy may be obtained from the Skeetchestn Indian Band. Please also ensure that this application form is in the most up to date version.

The Band is in support of Article 8(j) of the Biodiversity Convention, and associated articles, adopted by the United Nations Conference on the Environment and Development (UNCED). Canada has also committed itself to the implementation of these articles. Article 8(j) and extracts from the Traditional Resource Rights (TRR) model are attached. In particular, it should be noted that TRR states that:

> *"Environmental Impact Assessments (EIAs) should include not only local guidance and full participation, but Indigenous criteria and mechanism for assessment. Prior informed consent is fundamental, since Indigenous and traditional peoples must be afforded full disclosure of all relevant information regarding projects, including background, technical surveys, feasibility studies, existing and final assessments."*

As a proponent wishing to undertake development within Secwepemc traditional territory, you are expected to work closely with the Band, and to fully comply with its laws. This application form should contain a full statement of the nature of the development and the research methods proposed to be used in complying with the Territorial Heritage Law.

This is an application to the Skeetchestn Indian Band Cultural Resources Management Department (CRMD) for a Part I (___) Heritage Investigation Permit or Part III (___) Impact Mitigation Permit.

1. The area of the proposed development is as follows (please also attach a sketch or map):

_____
_____
_____

(Lot numbers or legal description, if available)

2. Provide documents setting out the nature of the proposed development which includes the following information:

(a) Area of fee simple land;

(b) Area of leased land;

(c) Other forms of tenure to be issued and length of tenure;

(d) Changes from existing uses;

(e) Environmental impact statements concerning resources of the area and impact on those resources;

(f) Reclamation aspects of the proposed development, if applicable; and

(g) Provincial, federal or municipal regulatory agencies involved in the development.

3. Please indicate whether or not you have applied, or intend to apply, for a permit under the *Heritage Conservation Act*, R.S.B.C., 1996, c 187.

(a) Yes, the proponent has made an application under the provincial law. Date of application (or anticipated date of application) _____.

If an application has been made, have you provided the CRMD with a copy of the application and any and all related documentation?

Yes _____

No _____

If not, kindly provide an explanation.

_____
_____

(b) No, the proponent has not made an application and does not intend to do so.

Note that notwithstanding that a proponent has applied for a permit under the Heritage Conservation Act, R.S.B.C., 1996, c 187, the proponent shall also comply with this law. The proponent is required, under section 8 of the Territorial Heritage Conservation Law, to provide to the CRMD a copy of any and all documentation concerning such permit.

4. In Part I, a Heritage Investigation Permit requires that the applicant conduct a comprehensive field survey resulting in the identification of all archaeological, spiritual, traditional-use, and historically significant areas which may be affected by a development.

   Outline below (or attach a statement) as to the archaeological methodology you propose to be used during the heritage investigation (including what soil testing or excavation work is proposed to be done).

   Please indicate the level to which the heritage material will be analyzed.

3. What archival, library and oral history research do you propose to do (interviews with the elders, etc.)?

4. Please attach a budget for the work to be performed under the permit.

5. Has an agreement been reached with the CRMD as to the heritage costs payable by the applicant?

   If so, please indicate the agreement which has been reached, and attach relevant documents confirming the agreement.

6. Please attach a list of all archaeologists and/or anthropologists and other employees whom the applicant proposes to conduct the heritage work, including their educational and work history.

   Applicants are encouraged to hire qualified workers from the Band membership to participate in the heritage investigation work. Please indicate whether any of the above people are members of the Skeetchestn Indian Band.

7. The applicant acknowledges the following:

7.1 That it is aware of the Cultural Heritage Policy for the Skeetchestn Indian Band, and that it will abide by the terms and conditions of the policy and any applicable by-laws, including the Territorial Heritage Conservation Law of the Band; and

7.2 That CRMD shall retain the right to approve the experts used by the applicant.

8. The applicant specifically undertakes that in the event that this application is approved and a permit issued, if any heritage resources are discovered in the course of the development which were not revealed or considered as a result of the Part I investigation, then the applicant, its agents, servants and employees shall immediately advise the CRMD as to the nature of the discovery.

Dated at _____, in the Province of British Columbia, this _____ day of _____. 199__.

Signed by the duly authorized representative of the applicant:

_____

_____

(Print Name)

_____

(Position)

For CRMD use only:

Date received: _____

*Category of lands to which this application relates:*_____

Action to the taken:

Further comments:

Date that Part I Heritage Investigation Permit granted or denied: _____

Schedule 2

SKEETCHESTN INDIAN BAND

PART I: FIELD SURVEY

or

PART III: IMPACT MITIGATION PERMIT

Permit No. _____ Date _____

Proponent:

Name of Project:

Type of Project:

Permit Area:

Permittee:

Address of Permittee:

Pursuant to the agreement between the Skeetchestn Indian Band and _____, this permit is issued to _____ of _____ (the "Permittee").

This permit authorizes the Permittee, his agents, servants and employees (hereinafter referred as the "firm") to conduct an archaeological investigation of the Permit Area in accordance with the Band's heritage policy.

The terms and conditions of this permit are as follows:

1. The firm is to conduct this study under the direction of the Cultural Resources Management Department ("CRMD") of the Skeetchestn Indian Band.

2. The term of the permit is from _____ to _____.

3. The firm will conduct a complete systematic heritage resource inventory and significance assessment of all heritage sites within the Permit Area, which area is described as:

_____

_____

4. The Permittee has submitted to the CRMD a detailed proposal and application for this permit which was approved by the CRMD on the _____.

5. The highest standard of skill and workmanship will be used in the performance of the work under this permit.

6. The study will be performed in accordance with the current professional standards and practices for archaeological work in British Columbia.

7. Restoration of all sites is required in accordance with the Permittee's proposal, and direction of the CRMD.

8. All persons engaged by the firm to assist in the study shall be bound by the terms and conditions of this Permit and shall be fully qualified to perform the work.

9. The Band reserves the right to terminate this permit if the permit is breached or if Chief and Council of the Band form the opinion that a continuation of the study is contrary to the interests of the Band.

10. On completion of the work under this Permit, or as otherwise directed by the CRMD, the firm will submit a detailed report to the CRMD.

11. If the work is terminated for any reason before the completion of the study, the firm will submit a detailed report of conclusions up to this point to the CRMD.

12. All data, maps, journals and photographs and other material generated through or found as a result of the study are the exclusive property of the Band and are to be submitted to the CRMD no later than 60 days following the conclusion of this permit, unless otherwise agreed to by the CRMD.

13. The Band and the Permittee shall jointly use their best efforts to publish any results from the investigation. There shall be joint copyright between the Permittee and the Band over any such publication, unless otherwise agreed between the parties.

14. All material found or generated by the proponent as a result of heritage investigations shall be the property of the Skeetchestn Indian Band.

15. Subject to any further direction from the CRMD, and in accordance with the Band's heritage policy, all heritage objects and associated materials are to be deposited with the Secwepemc Museum, _____, B.C.

Signed on behalf of

Chief and Council
Skeetchestn Indian Band

_____ _____

_____ _____

_____ Date_____

Declarations:

I, _____, hereby agree to abide by conditions outlined in this Permit.

Signature:_____

Date:_____(day)_____(month)_____(year)

I, _____, for and on behalf of _____, hereby agree to abide by conditions outlined in this Permit.

Signature:_____

Date:_____(day)_____(month)_____(year)

Schedule 3

(See Section 8(8) of Territorial Heritage Conservation Law)

I, _____ of the Skeetchestn Indian Band Cultural Resources Management Department hereby certify that the proponent, _____, to whom various heritage permits were issued as follows:

has satisfactory complied with the requirements of the permit(s) and the Territorial Heritage Conservation Law. I am satisfied that the conservation and protection of the Band's heritage in relation to the proponent's development has been or will be met by the proponent. [The proponent is required to comply with the following additional conditions]:

_____

Dated at the City of _____, Province of British Columbia this _____ day of _____, 199__.

Appendix 2: KLRMP – Secwepemc Statements of Interest

Secwepemc Nation Statement of Interest

The following statement was prepared by the Secwepemc Nation for inclusion in the Kamloops Land and Resource Management Plan document.

Secwepemc Interests in the Kamloops Land and Resource Management Plan

Secwepemc (Shuswap) people respect and support the efforts of non-aboriginal people to plan for sustainable, integrated resource management. As the first occupants and owners of their traditional territory, however, Secwepemc people are concerned that their own rights be respected. In particular, they are aware that non-aboriginal governments have assumed jurisdiction over Secwepemc land and resources without dealing with Secwepemc title, and without compensation for the loss of traditional Secwepemc resources. Nor have non-aboriginal governments respected the unextinguished right of Secwepemc communities to use, manage and protect their lands, waters and resources as they see fit. The Secwepemc Nation has never surrendered ownership and jurisdiction over its natural resources to any other government.

The Secwepemc position regarding the Kamloops Land and Resource Management Plan (KLRMP) is based on the following five principles:

1. Inherent Secwepemc aboriginal rights and title, and the right of Secwepemc communities to exercise jurisdiction over their traditional lands and resources, must be recognized by non-aboriginal agencies and interests groups. This is essential to land and resource management planning in Secwepemc traditional territory.

2. The Secwepemc Nation and its agencies constitute a distinct order of government, not an "interest group". The KLRMP process is designed to be a forum for interests groups and various agencies involved in land use planning. Interest groups and non-aboriginal government agencies do not have aboriginal rights, whereas the Shuswap Nation does.

3. The KLRMP is not the appropriate process for negotiating aboriginal rights and title. Secwepemc aboriginal title and rights will be negotiated on a government-to-government basis between Secwepemc government representatives and representatives of British Columbia and Canada, respectively.

4. KLRMP participants should be aware that their decisions regarding land use zones, allocation of resource tenures, and resource management strategies will be impacted by future treaty negotiations. Secwepemc communities within the KLRMP planning area will negotiate a treaty with British Columbia and Canada to resolve the issues of aboriginal rights and title, and Secwepemc self-government. They do not want future treaty negotiations to be limited, prejudice, or compromised by the KLRMP process.

5. Secwepemc government agencies must be equipped with the same technical resource for land use planning, resource management, and treaty research as non-aboriginal governments and interests groups. This is a pre-condition for resolving the issue of unextinguished aboriginal rights and title.

To assist KLRMP participants in being aware of Secwepemc interests within KLRMP planning area, the following is a partial interim outline of these interests.

Self-government interests:

1. Jurisdiction and ownership

- recognition of Secwepemc traditional territory
- recognition of Secwepemc aboriginal land title and rights
- meaningful consultation and informed consent before land use and resource
- management decisions are made.

2. Joint planning

- land use
- water quality
- resources and sustainability
- biological diversity

3. Public education of Secwepemc interests in KLRMP

- policy statements
- public forums
- workshops
- in-service professional development activities

Environmental Protection Interests:

1. Land use zoning/management

- parks and other protected areas
- special management areas
- integrated resource management
- environmental research/ monitoring: e.g. fish, wildlife, forest ecology, farmlands
- settlement planning

2. Traditional Secwepemc resource uses

- Fishing: salmon, trout, char, etc.
- Hunting:

  a) game animals: moose, deer, elk, caribou, goats, sheep, bear, etc.

  b) birds: ducks, geese, grouse, etc.

  c) fur-bearing animals: lynx, martin, marmot, otter, beaver, etc.
- Gathering:

  a) berries: saskatoons, blueberries, huckleberries, cranberries

  b) nuts: hazelnuts, pine

  c) bark: birch, pine, alder

  d) roots: corms and bulbs

  e) firewood: all types

  f) needles: pine

  g) mushrooms

  h) medicinal plants: known to Elders
- Settlement and occupation:

  a) access trails and roads

  b) camping for hunting, fishing, gathering

  c) traditional occupation sites

  d) housing material

  e) special cultural sites, sacred sites, and gravesites
- Benefits from extraction of resources

  a) food

  b) shelter

  c) clothing

d) medicine

e) handicrafts

f) cultural/ spiritual values

g) employment and/or traditional sustenance activities

Economic Development Interests:

1. New or continuing economic activities, including:

- primary resource extraction (e.g. forestry, mining, agriculture, fishing)
- manufacturing
- retailing
- services
- recreation

2. Economic enterprise

- job creation
- skills training
- joint ventures with Secwepemc communities
- investment

3. Revenues and revenue transfers

- revenue sharing with Secwepemc communities from resource extraction
- financial compensation to Secwepemc communities for lost revenue opportunities

4. Permits and tenures

- timber
- minerals
- settlement and/ or industrial sites
- agricultural land, grazing
- recreational sites (both public and private)
- trapping, guide outfitting

Appendix 3: Draft Affidavit for: Mike Anderson File#1028-001

File#: 1028-001

Rough Draft affidavit for: Mike Anderson

AFFIDAVIT # _____ of Michael Anderson

I, ANTHONY MICHAEL ANDERSON, Registered Professional Forester, No. 3147 and Professional Biologist, No. 2070, of Tunkwa Creek British Columbia solemnly affirm and say as follows:

Background and Occupation

1. I have lived in the Skeetchestn Indian Band Traditional Territory for 61 years, living always on the land and not within the town of Savona.

2. I have been in the employ of the Skeetchetsn Indian Band for 13 ½ years as the Natural Resources Manager.

3. I am also an independent woodlot operator with Woodlot License #387.

4. As Natural Resource Manager for the Skeetchetsn Indian Band, I manage 12 to 25 employ~~m~~ees. The project areas I manage are various, notably forestry, fisheries, value-added wood products, range, agriculture, archaeology, cultural heritage resources as well as environmental monitoring and restoration.

5. I manage on behalf of the Skeetchetsn Indian Band 2 to 3 non-replaceable forest licenses and a woodlot license as well as advise the Band on all aspects of forest and land management including reviewing and providing critique and recommendations for all referrals.

6. I have also been managing a number of construction projects including construction of two steel shops and a 4500 square foot wood office building.

7. I also have reviewed the A.A.C. calculation for T.F.L. 35 from both a forestry and a biological perspective and can concur with all the points Mr. Mc Grath raises.

History of Key Historical Events on Kamloops Division Territory

8. I am knowledgeable about the various developments on (Kamloops Division Territory specifically Skeetchestn Territory) which began and continued the trend towards more development on the Territory which has separately and/or cumulatively changed the

Territory, leaving little land available over which the members of the Skeetchetsn (and Tk'Emlups) Indian Band are able to exercise their traditional activities.

9. Some of the key dates and events regarding development on the Territory are as follows:

a) In 1954 the Trans Canada highway through Skeetchestn traditional territory was rerouted and rebuilt to a modern day standard.

b) In 1955-56 a West Coast transmission (now Spectra Energy) 30 inch diameter natural gas pipeline was placed through the Skeetchestn Reserve and Territory; subsequent to this in the 1960's an additional oil pipeline was constructed on the same right of way and in the early 1970's an additional 36 inch natural gas pipeline was added.

c) In the late 50's and early 60's Sabiston Lake Road was constructed and areas in the mid elevation East of the Skeetchestn Reserve on the North Side of Kamloops Lake were extensively logged;

d) 1960's Lake side lots were offered for lease on Tunkwa and Leighton lakes now many of these leases have been sold as fee simple private properties without true consultation with the Band.

e) Between 1964 and 1966 a major BC Hydro 138 Kilo volt electrical transmission line was installed which ran through Savona and the Tunkwa/Durand Creek valley to Mamette Lake south of Logan Lake

f) In 1968 to 1970 Kamloops Weyerhaeuser pulp mill opened up providing further markets for wood and compromising the Thompson River system and the fishery within this system;

g) In 1972 the instant mining town of Logan Lake was constructed in an otherwise undeveloped grassland meadow at the Southern end of Skeetchestn Traditional Territory. This town now has a population of 2-3000 and has put phenomenal pressure on both hunting and fishing opportunities for Band members in this part of the territory in addition it has also been awarded a Community Forest within Skeetchestn territory thus further compromising the Band's opportunity to get a green wood tenure.

h) Between 1972 and 1975 another major transmission line was installed from Mica Dam through the Stk'emlups Traditional Territory from approximately Logan Lake to Cache Creek and creating a linear right of way for B.C. Hydro now B.C. Transmission Corp. approximately 100 meter wide.

i) Between 1970 and 1975 the practice of clear-cutting was introduced in this part of the Province (Kamloops area of the Southern Interior) and lodgepole pine and spruce were now looked upon (by Gov't and industry) as commercially viable species

whereas before this time only Douglas Fir had been targeted and was usually harvested utilizing selection logging. This change in species focus also made clearcutting a much more viable option and moved logging into the higher elevation more sensitive headwater areas of the watersheds. It was also my observation that with the onset of clearcutting within my watershed the hydrological regime tended to change so that spring melts caused higher water flows for shorter periods of time as well as lower water levels at the end of the summer and early into the fall.

j) In the early 1980's construction of the #4200 logging road which was built for off highway trucks and lead into the upper reaches of Guichon Creek opened up a large area of upper elevation watershed and habitat to increased development.

k) Skeetchetsn Band members stopped fishing in Deadman Creek in 1985 due to dangerously low fish stock levels which included Thompson River Coho which is on the Species at Risk list as well as Steelhead which are also in serious decline. We suspect that this is due to a number of causes one of which is habitat deterioration due in part to logging and associated road developments within the Deadman watershed. Due to the loss of adequate fish in the Deadman river the Band members have not had a safe venue to teach their children and youth traditional fishing methods and thus over the past two generations this knowledge and these skills have been virtually lost.

l) June of 1990 saw an unprecedented spring flood in the Deadman River where 5 or more kilometres of road was underwater. At that time as well, Skeetchestn Indian Band's new fish hatchery was washed out and 3 or more bridges needed replacement.

m) In the 1990's under the auspices of Forest Renewal B.C. (F.R.B.C.) the health of a number of Skeetchestn's watersheds including Deadman, Bonaparte, and Durand as well as the local moose populations were assessed and recommendations were put forth and largely ignored. In discussions with industry and Government in recent years very few people seem to be aware of these studies or follow any of the recommendations.

n) 1997-98 the lodgepole pine bark beetle epidemic began which in turn lead to the standard practice of clearcutting extensive areas of forest which were often comprised of mixed species of trees including Douglas fir, White and Engelmann spruce and sub-alpine fir purportedly to address forest health issues. For a number of years this was a standard industry practice and only recently probably because of direction from the Chief Forester in regards to retention has this practice been somewhat modified.

Key Watersheds Affected by Forestry Activities

10. I have observed over the years key watersheds for the Skeetchestn members being impacted by forestry activities, which in turn has made it more difficult and at times impossible for members to carry out traditional activities particularly the fishing of salmon and hunting of moose as well as the gathering of certain foods (e.g. huckleberries, Indian potatoes) and medicines (e.g. Balsam fir and labrador tea.) In particular the following watersheds have been impacted:

a) Deadman Creek;

b) Criss Creek;

c) Heller Creek, which I have observed is a very important medicine gathering area and well known for its "tea beds";

d) Clemes Lake and Clemes Creek;

e) Hihuim Lake, an area of great importance to the Skeetchestn spring fishery;

f) Durand Creek and Tunkwa Creek;

g) Gisborne Lake, and

h) Tranquille River.

11. It is my opinion that there does not remain a single sizeable watershed in all of Skeetchetsn Territory and much of the Kamloops Division) that has not been impacted by forestry harvesting and road building.

Impacts of Forestry and Related Activities on Kamloops Skeetchetsn (~~?~~ Kamloops Division) Territory

- Destruction of habitat
- Lack of connectivity
- Lack of buffers on riparian features
- Road density.

E.g. Riparian areas, cattle unable to graze, lack of buffers, flash floods. SELECT PICTURES to depict

Skeetchetsn Members' Participation in Forestry

a) 1930' to 1970's Many Band members were employed in horselogging and working on bush mills in the earlier years probably up until the 1960's at which point most bush mills closed down and equipment logging became the standard. After this many Band members were still employed in equipment loggin up until approximately 1975-80

b) Logging and employment with Savona Sawmills then Evans forest products untill 1987 at which point Evans sold out to Ainsworth who in turn shut down the lumber mill and put most Band member employees out of a job.

c) Early 1990's under the F.R.D.A. program a number of Band members were employed spacing and pruning mainly on Reserve.

d) Later on in the 1990's when Forest Renewal B.C. was formed these crews were then employed off reserve within the Traditional Territory spacing, pruning, fertilizing, conducting watershed assessments and deactivating roads until F.R.B.C. was shut down in about 1999-2000

e) 1999-2001 as F.R.B.C. spacing and pruning operations shut down these same crews got winter work conducting beetle probes and fall and burn beetle sanitation treatments.

f) 2000-2004 to supplement employment opportunities afforded by the beetle sanitation work the Band also developed a horselogging crew and conducted these activities in an effort to remain employed as well as provide examples of light touch selection logging alternatives to what had become conventional clear cut logging. For a short while they horselogged for Weyerhaeuser around Upper Criss Creek but the majority of opportunites were provided on private woodlots # 387 at Tunkwa Creek and the Band's own woodlot # 1600 at Deadman falls. These horselogging treatments still stand as rare examples of alternative harvesting methods that respect and protect cultural and other forest values rather than just fiber.

g) 2003-2004 The Band conducted riparian harvesting trials in four different watersheds throughout the Traditional Territory. Background data was collected prior to harvesting and a number of different methods and harvesting intensities were employed. Plots were set up including a) no harvest controls, b) harvesting intensities of 50% merchantable volume removal, and c) 100% merchantable volume removal. The different methods employed were by a) horselogging, b) using conventional equipment, c) utilizing small scale light impact equipment.

h) Since 2004 activities have been mainly centered around conducting archaeological reviews and managing Non Replaceable Forest Licenses.

i) We have also been involved in some form of value-added production since about 2000 beginning with the construction of a 12,000 ft2 log powwow arbour and then moving on in 2003 to log building. Since about 2005-6 we have been operating a small two man mill for cutting lumber for our own use and have also been designing and constructing unique 12 sided post and beam building modules based on traditional pit house designs.

Efforts to protect cultural resources and biodiversity and get meaningful involvement in forest industry:

- 1997 and before Continually raised concerns with M.O.F. and Licensees about clearcut logging, plantation forestry and the lack of biodiversity, the predominance of road building and road densities within our watersheds as well as inadequate riparian protection on all water bodies. **To no avail**

- 1998 Expression of interest in C.F.A. in order to obtain venue to practice and demonstrate alternatives to conventional clearcut harvesting and plantation forestry. **To no avail**

- Involvement in Interior watershed assessment procedures (IWAPs)

- Conducted Upper Deadman Moose Study in partnership with Ainsworth

- 98-99 Cultural heritage assessment of C.P. 615 Presented to both Weyco and Ministry of Forests also identified major tea beds a high value cultural heritage resource

- 2000 Acquired woodlot license #1600 thus giving us a venue to begin to demonstrate alternatives to conventional clearcutting where we began by selection logging with horses.

- 2001-2003 Horselogging for Weyco in an attempt to demonstrate alternatives to conventional clearcut harvesting and plantation forestry

- 2001 Six Mile Agreement commitment from Government to allocate Skeetchestn a CFA To no avail

- 2000? Economic report re: Economic returns from Horselogging vis a vis conventional CC harvesting

- 2001 Eyes of Sk'lep watershed plan for the Deadman watershed.

- 2001-2002 I.N.A.C. supported Resource Partnership Program (RPP) project attempting to get involvement towards co-management on Weyco Licenses in Band T.T. To no avail

- 2002 Negotiated with both Government and West Fraser when Licenses were transferred to get alternatives to conventional clearcutting introduced into all riparian habitats. **To no avail.**

- 2001 -2002 Through the RPP project we had on going negotiations with Ministry of Forest Kamloops Region (Fred Baxter, Mike Blackstock) to work towards obtaining a C.F.A.) and a co-management regime within our Traditional Territory **To no avail.**

- 2002-03 Developed and introduced a separate Cultural Heritage Overview (C.H.O.) process to inventory cultural values on all blocks we are asked to assess for Archaeological values.

- 2002-03 Meeting with Minister Geoff Plant in regards to obtaining a greenwood tenure (CFA) and some control over logging operations within the T.T. to no avail.

- 2002-03 Through an Interim Measures Agreement The Band in conjunction with Thompson Rivers University conducted riparian harvesting trials in four different watersheds throughout the Traditional Territory. Background data was collected prior to harvesting and a number of different methods and harvesting intensities were employed. Plots were set up including a) no harvest controls, b) harvesting intensities of 50% merchantable volume removal, and c) 100% merchantable volume removal. The different methods employed were by a) horselogging, b) using conventional equipment, c) utilizing small scale light impact equipment.

- 2002 Introduced Skeetchestn Cultural Resource Management Zones throughout T.T. along with accompanying harvesting guidelines at a formal meeting with Industry and Government agencies. Declared that these guidelines were to be followed throughout Skeetchestn T.T. in order to protect cultural values. **To little or no avail**

- 2003-2004 Worked with S.N.T.C. and Ministry of Forests officials from Victoria to better define Cultural Resources rather than assume that they were merely archaeological resources. This resulted in a separate category within F.R.P.A. and the F.S.P. process so that both archaeological resources and other cultural resources were treated as distinct separate values.

- 2005 Published the results of the riparian harvesting trials and the additional riparian literature review on our website.

- 2005 Published Skeetchestn Cultural Resource Management Zones criteria and guidelines on our website.

- 2005 Introduced a formal Cultural Heritage Assessment process to both Industry and Government through a formal workshop / meeting in an attempt to get properly resourced cultural heritage overviews done on all forestry developments within our T.T. **To no avail**

- 2005 Developed in co-operation with two other senior R.P.F.'s a Silvicultural Strategy for Skeetchestn Traditional Territory in an attempt to protect cultural resources including hydrological function and preserve mid term timber supply. **To no avail**

- Mtg. with Minister Coleman to discuss Skeetchestn's need for a greenwood tenure. **To no avail**

- 2006 Signed off a five year Interim Measures agreement with Ministry of Forests (F.R.O.) in regards to forestry developments within the T.T. This agreement had clauses in it (Section 12) speaking directly to jointly working on the development and implementation of Skeetchestn's C.R.M.Z.s and Sivicultural strategy within our T.T. **To no avail**

- 2006 In co-operation with Thompson Rivers University conducted a study of health of important culturally significant plants in response to harvesting in riparian habitats.

- 2008-9 challenged the transfer of Weyco Licenses without adequate consultation with the Bands

Appendix 4: Hazard Indicator Measures and Indicators

Listing of each of the indicators used along with the measures involved, the formulae, and comments on the intent and purpose of each (Forsite Consultants Ltd. 2012).

Table 4 – Hazard Indicator Measures and Formulae

Indicator	Measurement	Kamloops TSA Formula	Comments
Non-forested area	Percentage of reporting unit covered by Alpine or Alpine Forest types.	(A + AF area) / (Reporting Unit Area) * 100%	It is easier to affect runoff and stream flow in reporting units that are fully forested, less so with increasing amounts of alpine (no trees) **Scores get inverted**. The areas with higher percentage of Alpine (A) and Alpine Forest (AF) become the lowest hazard scores.
BEC zone	Proportion of watershed by BEC variant category. Score is the sum of BEC snow accumulation scores (0 – 2.5) times their areas.	(0.5*(Area of 0.5 Ranked BEC)/Total Area)) + (1*(Area or 1 Ranked BEC)/Total Area)) + (1.5*(Area of 1.5 Ranked BEC) + (2*(Area of 2 Ranked BEC) + (2.5*(Area of 2.5 Ranked BEC) + (3*(Area of 3 Ranked BEC) / Reporting Unit Area	Reductions in forest cover have a more significant effect on runoff + stream flow in units with high snow accumulation + good canopy closure. Low snow and limited closure = hard to affect. Many BEC zones are in between.
ECA (forest cover disturbance)	ECA as per 1999 Watershed Assessment Guidebook with full recovery at 12 m. Private land treated as clearcut with no recovery. MPB effects built into ECA calculation. Applies to the entire reporting unit.	ECA / Reporting Unit Area * 100%	MPB in Mature stands (Age ≥60): a) >70% PI = 40% ECA b) 30 – 70% PI = 20% ECA c) <30% PI = 0% ECA MPB in Openings (<60 years) > 70% PI: a) Ages 20–40=20% ECA; b) Ages 41–59=50% ECA
Drainage density ruggedness (DDR)	Stream density as a function of relief.	(km of streams / km^2 of reporting unit) *(reporting unit relief)	Steeper and better drained reporting units are more flashy and likely to respond in a negative way with land-use – roads and forest cover reduction.
Absence of lakes / wetlands	Percent of the watershed in open water (lake/ wetland). Large lakes in lower portion of reporting unit have greatest affect.	((1* Lake Wetland Area below H70 Line) + (0.75 Lake Wetland Area above H70 and below H40) + (0.25 * Lake Wetland Area above H40 line)) / Total Area * 100	**Scores get inverted**. The areas with the lowest scores (i.e. the smaller percentage of lakes and wetlands) are considered more hazardous.
Extent of roading	Density of roads per square kilometer	Road km / Reporting unit area km^2	Increasing road density increases exposed surface materials to erosion.
Terrain stability	Proportion of reporting unit area containing slopes >60%	((Area of slopes>60% within the reporting unit) / (Reporting Unit Area))	Steeper terrain is more likely to generate sediment with land-use activity and deliver sediment to streams.
Soil erodability	Percentage of the reporting unit in high erosion potential geological units – GSC quaternary deposits	(Area of reporting unit in high erosion polygons / Total reporting unit area) * 100%	Quaternary deposits coverage from LRDW. Can be an issue for water quality and channel stability in steep terrain and where channels are incised into thick quaternary deposits. Does not work as well in gentle terrain.
Steep coupled slopes	Proportion of the reporting unit located in steep (>50%) coupled slopes. Coupled slopes have less then 50m of gentle terrain between the steep slope and stream.	(Area of steep coupled slopes / Total reporting unit area) Steep coupled area derived through GIS analysis – area directly upslope of intersection between 50m buffer on streams and 50% slope coverage.	A measure of slope steepness and the connection to streams. Steep and coupled = more likely to delivery sediment to channels.

Indicator	Measurement	Kamloops TSA Formula	Comments
Roads close to water	Total length of roads within 50 m of a stream by reporting unit.	Length of road within 50m of stream / total area of reporting unit (km/km^2)	Erodible surfaces in close proximity to streams.
Roads on steep coupled slopes	Density of roads located on steep coupled slope areas.	Length of road on steep coupled slopes / Total reporting unit area (km/km^2)	Development factor combining sediment generation on roads + their effect on drainage with the delivery aspect of steep coupled slopes.
Disturbance on gentle over steep (GOS)	Proportion of the reporting unit that is harvested with <50% slope upslope of steep coupled slope areas. Include all harvesting in the last 75 years.	(Harvested area in the last 75 years on GOS / Total reporting unit area)	Designed to capture development related effects on drainage within the gentle portion of GOS areas. Diversions in gentle terrain often result in erosion or slides on the steep portion with sediment input to streams. More of a factor for pre-Code development.
Logged riparian area	Proportion of the total stream length within or adjacent to cutblocks. Summarized/weighted by stream order classes, with higher order streams receiving a greater weighting.	(0.5* length of order 1 streams within 30m of logging / Total length of order 1 streams within the reporting unit) + (0.75 * length of order 2 - 4 streams within 30m of logging / Total length of order 2 – 4 streams within the reporting unit) + (1 * length of order 5 - 9 streams within 30m of logging / Total length of order 5 – 9 streams within the reporting unit)	Reductions in riparian function along lower order streams often leads to decreases in channel stability, decreases in in-stream wood supply and channel complexity, and increases in lateral movement with sediment generation.
Cattle / range use	Proportion of total stream length within active range unit (km/km). Summarized/weighted by stream order classes, with higher order streams receiving a greater weighting.	(0.5* length of order 1 streams within range tenure / Total length of order 1 streams within the reporting unit) + (0.75 * length of order 2 - 4 streams within range tenure / Total length of order 2 – 4 streams within the reporting unit) + (1 * Length of order 5 - 9 streams within range tenure / Total length of order 5 – 9 streams within the reporting unit)	Uncontrolled livestock access to streams can reduce riparian function and damage stream beds and banks resulting in increased sediment production, decreases in channel stability, and input of fecal matter to drinking water source areas.
Private land	Proportion of total stream length within or adjacent to private land (km/km). Private land buffered by 20m to capture private land areas “adjacent to” streams. Summarized/weighted by stream order classes, with higher order streams receiving a greater weighting.	(0.5* length of order 1 streams within private land tenure / Total length of order 1 streams within the reporting unit) + (0.75 * length of order 2 - 4 streams within private land / Total length of order 2 – 4 streams within the reporting unit) + (1 * length of order 5 - 9 streams within private land / Total length of order 5 – 9 streams within the reporting unit)	Private land is most often located along major streams in alluvial fan and floodplain environment. Reductions in forest cover along with road construction, ditching, and other in-stream work can result in destabilization, increased erosion, reduced fan and floodplain function, and direct effects on fish and fish habitat.
Placer mining	Proportion of area occupied by placer mine tenures adjacent to streams (ha/ha). Summarized/weighted by stream order classes, with higher order streams receiving a greater weighting.	(0.5* area of placer mine tenure within 500m of order 1 streams) + (0.75 * area of placer mine tenure within 500 m of order 2 - 4 streams) + (1 * area of placer mine tenure within 500 m of order 5 - 9 streams) / Total area of the reporting unit	Historic placer mining known to be a significant source of water quality impairment where present on a system. More recent activity can still pose a threat to channel bank, fan and floodplain stability where not undertaken properly. Most disturbance in fan and floodplain areas results in a reduction in function and stability over the long term.

Appendix 5: Cultural Resource Management Zones

Skeetchestn Cultural Resource Management Zones

In an attempt to address the deterioration of their watersheds and the loss of fisheries and riparian habitats as well as other important cultural values Skeetchestn Indian Band implemented the concept of Cultural Resource Management Zones (C.R.M.Z.s) throughout their Traditional Territory

C.R.M.Z.s are to be established within 100 meters of all water and riparian features in Skeetchestn Traditional Territory.

All C.R.M.Z.s require Cultural Heritage Overviews

The canopy within these zones is to be managed for:

1. Wildlife habitat and movement corridor values.
2. Fisheries habitat in terms of:
    - water temperatures
    - contributions to stream processes and biology
    - amelioration of spiking in the hydrograph
    - sediment filtration capacity
3. Traditional medicine and plants for a variety of other uses.
4. Windfirmness of residual stands.

Applicable constraints within C.R.M.Z.s:

- No more than 50 % basal area removal in any single pass within 50 meters of water.
- Use of selection and shelterwood silvicultural systems.
- Use of light impact equipment and labor intensive harvesting methods.
- Assessment and protection of all potential and existing wildlife snags.
- Inventory and protection of all regeneration and non-merchantable stems.

- Aspen, birch and sub-alpine fir will be considered preferred species within these zones and are to be encouraged for their wildlife habitat, medicinal and other Traditional values.

- Minimal road building within Cultural Resource Management Zones

- Minimum 20 meter reserves on all fish bearing and direct tributary streams where recommended by Department of Fisheries and Oceans.

During this period of intense Mountain Pine Bark Beetle infestation, due to the unpredictable rates and duration of attack it is very difficult to determine if and when unacceptable E.C.A.s (Equivalent Clearcut Areas) will occur within any one watershed or portion thereof. These unacceptably high E.C.A.s can have extremely detrimental effects to important cultural and other First Nations values. In the case of Mountain Pine Beetle Blocks, where harvesting is occurring primarily to address forest health issues further constraints will therefore apply.

These constraints include:

- The retention of all advanced regeneration and species other than pine within 100 meters of water and water bearing features.
- The removal of green attack pine only within 50 meters of water and water bearing features.

Appendix 6: Skeetchestn Silviculture Strategy

Skeetchestn Indian Band
Savona. BC

CESO Assignment: #82585

Silviculture Strategy

January 30, 2006

Peter Ackhurst RPF

Carl Hennig RPF

Prepared under direction of A.M. Anderson R.P.F.

Introduction

The silviculture strategy for the Skeetchestn Band territory was developed in discussion with the Natural Resources Department of the Skeetchestn Band, forest companies, BC Timber Sales and BC Forest Service.

Vision

The Sketchestn vision is to own and manage the entire forest in their traditional territory. The forest area will be a combination of fee simple lands through the treaty process and community forest tenure (area based) on the remainder of the lands. A non renewal forest licence will be the starting point. This paper documents the silvicultural strategy (logging guidelines) that will be used to manage the Skeetchestn forest.

Silviculture Goal

The goal is to harvest timber from the Skeetchestn Forest on a sustainable annual basis with minimal damage to the environment. Water is the most important resource to the Skeetchestn people and it is the priority for protection on these lands.

Silviculture Plan

Timber production is one of the important outputs of the Skeetchestn Forest and both the focus and challenge of the silvicultural program is to ensure that timber production is conducted in a manner that is both environmentally acceptable and economically viable. More specifically, the silvicultural program will need to balance all forest values including watershed values, timber production, and habitat values. The following broad strategy will be followed:

- **Pure Pine Stands** – Clear cut pine stands in large openings. Leave all spruce, fir, and deciduous standing. Retain about of 10% of the original stems (dead or alive) within openings and retain uncut wildlife tree patches as required. Augment expected natural regeneration with planted Douglas-fir to produce mixed species stands. Depending on site conditions, species mixtures would include a hardwood component to facilitate site amelioration as well as to increase fire resistance.

- **Spruce and Douglas Fir Stands** – Group and single tree selection with openings permitted up to two tree lengths across. Harvest to remove 50% of the basal area on a 30 year cutting cycle for medium sites and 35 years for poor sites. Salvage the dead pine if it is possible to have no damage to the remaining stand. Identify and retain some old growth structure with wildlife trees and patches as part of an overall wildlife habitat strategy.

- **Mixed Pine Spruce Fir Stands -** This type includes pine leading stands with a Spruce and fir component. . Salvage the dead pine if it is possible to have no damage to the remaining stand. . Leave all spruce, fir, and deciduous standing, or manage the spruce

and fir stands as group and single tree selection with openings permitted up to two tree lengths across.. Harvest to remove 50% of the basal area on a 30 year cutting cycle for medium sites and 35 years for poor sites. Identify and retain some old growth structure with wildlife trees and patches as part of an overall wildlife habitat strategy

- **Second growth stands**. Most second growth stands in Skeetchestn territory are presently Douglas fir and should be managed under a single tree or group selection regime as noted above.

- **Riparian Areas** –The protection of watershed values is the number one goal in the Skeetchestn Forest and as such the riparian no log zone is 10 metres along streams and a management zone of another 40 metres. Wildlife tree patches can be incorporated in to these zones. Other than the increased size of the riparian zone, the default practice requirements specified in the Forest Planning and Practices Regulations (FRPR) of the Forest and Range Practices Act will be followed. All riparian areas shall have a 100 meter Cultural Resource Management Zones established around them and as such will be subject to constraints as outlined in Skeetchestn policy

- **Beetle Epidemic**. During the beetle epidemic, no logging of spruce and fir stands will be carried out. The focus is on dead pine and all spruce and fir stands must be retained to provide some forest cover on the landscape. The goal is to reduce the harvest area in the Skeetchestn Forest and leave some dead pine standing.

- Provisions to minimize **windthrow risk** must be an important component of the Skeetchestn Forest silvicultural strategy. These provisions will include pre-harvest assessments to identify potential risks as well as site specific modifications to harvest practices such edge feathering. Some blowdown will be permitted as a cost of preserving the spruce and fir stands.

- **Spur roads** should be temporary in nature and designed, located and constructed to occupy the smallest possible footprint, while still incorporating adequate water drainage provisions. As the Skeetchestn Forest silvicultural strategy is based on repeated stand entry and as many spur roads will support recreational and other access needs, these roads would generally be "put to bed" rather than deactivated following harvest. Wherever possible, roads should be located with due consideration to harvesting needs as well general access for recreational and other purposes as identified in the Skeetchestn Forest access plan. Roads should not be located within Cultural Resource Management Zones (i.e. within 100 meters of water except to access stream crossings especially in cases where roadside harvesting is being employed).

- **Restoration treatments** – Areas will be identified for restoration treatments on site specific project basis

Conclusion

The Silviculture Strategy will over time provide better protection of the important water resource as well as providing a continuous flow of forest products. A balanced approach to all resources is the key focus.

Appendix 7: Map – Deadman Watershed

Appendix 8: Map - Territorial Heritage Conservation Law Land Categories within the Deadman Watershed

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